

Policy Analysis

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Private School Chains in Chile Do Better Schools Scale Up?

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Executive Summary

There is a persistent debate over the role of scale of operations in education. Some argue that school franchises offer educational services more effectively than do small independent schools. Skeptics counter that large, centralized operations create hard-to-manage bureaucracies and foster diseconomies of scale and that small schools are more effective at promoting higher-quality education. The answer to this question has profound implications for U.S. education policy, because reliably scaling up the best schools has proven to be a particularly difficult problem. If there are policies that would make it easier to replicate the most effective schools, systemwide educational quality could

be improved substantially.

We can gain insight into this debate by examining Chile's national voucher program. This paper uses fourth-grade data to compare achievement in private franchise, private independent, and public schools in Chile. Our findings suggest that franchises have a large advantage over independent schools once student and peer attributes and selectivity are controlled for. We also find that further disaggregating school franchise widens the larger franchise advantage. We conclude that policies oriented toward creating incentives for private school owners to join or start up a franchise may have the potential for improving educational outcomes.

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The evidence on private school franchises and small private independent schools is limited because most educational systems only provide funding to public schools.

Introduction

The optimal scale of operations of schools is a hotly debated issue in current educational policy reform discussions. One view is that larger schooling operations offer educational services more efficiently than small independent schools. Proponents argue that increasing the size of schooling operations would lower per pupil costs and free up resources for use at the school and classroom levels.¹ Researchers also claim that large private school franchises promote the creation of sound institutional environments in member schools.²

Advocates of large school chains also maintain that such chains have an easier time gaining credibility and legitimacy in the community,³ and that larger schooling operations have more opportunities to access private investments to expand than do smaller ones.⁴

These assertions have sparked two different trends in school management: consolidating public school districts and increasing public funding for private and charter school franchises and Educational Management Organizations. Despite a growing population, more than 100,000 school districts have been eliminated since 1938, a decline of nearly 90 percent.⁵ There is also a growing number of private and charter school partnerships and Educational Management Organizations in the United States.⁶ For instance, Edison Schools, the United States' largest for-profit manager of schools, has become one of the nation's largest charter school management organizations and has increased from slightly more than 200 charter schools in 1995 to more than 3,600 charter schools in 2006.

Critics fear that these reforms could have potential negative unintended consequences. They argue that large, centralized operations will create hard-to-manage bureaucracies and foster diseconomies of scale due to associated problems of managing complex organizations and maintaining a sense of

order.⁷ Opponents are also concerned that large schooling operations will make it difficult to create a sense of community among students, parents, teachers, and administrators.⁸ Others are concerned that larger schooling operations encourage more standardization and less innovation.⁹

Some have argued that reducing the size of schooling operations is a more effective way to improve educational outcomes. They claim that small schools can improve the quality of education by creating intimate learning communities where students are encouraged by educators who know them.¹⁰ Small school advocates also argue that smaller schools foster cooperation between teachers, school administrators, and parents and higher trust in the school community.¹¹

Following these insights, many current proposals for reform in the United States share a vision of small, autonomous schools, encouraged to strengthen school communities.¹² The small schools movement has also made significant progress in recent years. For example, the Bill and Melinda Gates Foundation invested more than \$1 billion to divide large urban high schools in the United States. These resources partly funded the creation of 197 small high schools in New York City alone.¹³

Much of the existing empirical evidence on the optimal size of schooling operations is mixed and often clouded by methodological limitations.¹⁴ The research that examines the benefits of private school franchises versus small independent schools also suffers from thin data because it derives from the evaluation of small-scale programs. For instance, in its evaluation of Edison Schools, which was not a randomized study, researchers found that the performance of these schools varies.¹⁵ Similarly, the evaluations of the small high schools funded by the Gates Foundation also suggest that there is wide variation in the quality of these schools.¹⁶

The evidence on private school franchises and small private independent schools is limited because most educational systems only provide funding to public schools.¹⁷

We can gain insight into the distinct strands of arguments on the optimal size of schooling operations by examining Chile's national voucher program. In 1981 Chile began financing public and most private schools with vouchers. Private voucher schools currently account for over 50 percent of total enrollment and about one third of these schools belong to private voucher school franchises. This paper compares the achievement of fourth-graders in private voucher franchise, private voucher independent, and public schools. The results presented in this study provide suggestive evidence that, all else being equal, private voucher franchise schools are more effective than private voucher independent and public schools.

Background on Chile

During the 1980s, the military government in Chile (1973 to 1990) instituted a sweeping education reform package. First, the government decentralized the administration of public schools, transferring responsibility for public school management from the Ministry of Education to municipal governments, whose

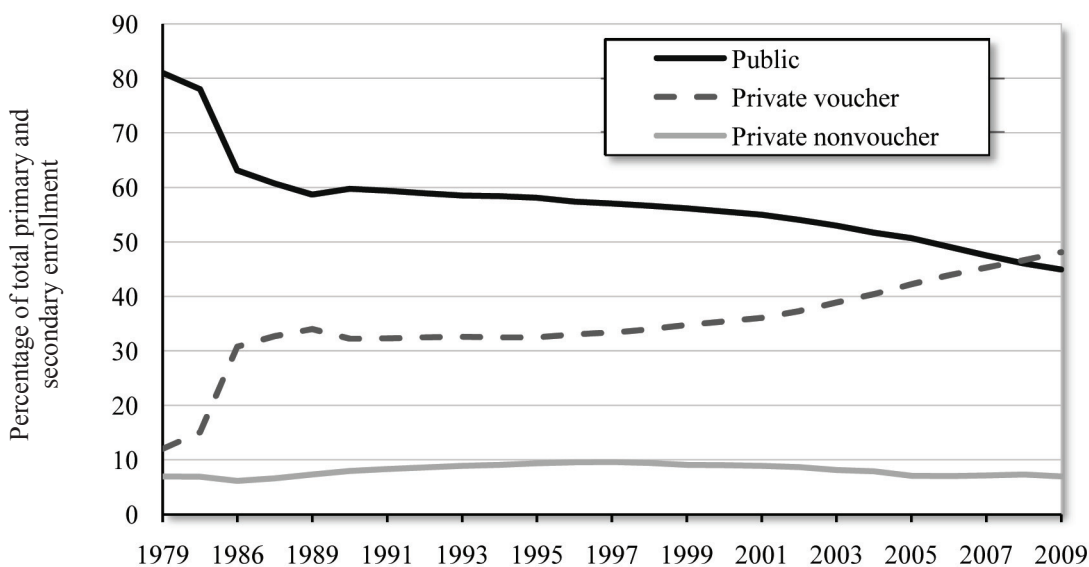
maximum authority is the mayor. Second, the government introduced a flat per-pupil voucher scheme. Municipalities and private schools that did not charge tuition started to receive a per-student voucher for every child attending their schools. As a result, enrollment losses began to have a direct effect on their education budgets. Elite private schools that charged tuition continued to operate without public funding.

Education in Chile has become increasingly privatized since the voucher reforms were introduced. In 1979, 12 percent of Chilean K-12 students attended private schools that received some public subsidy, and another 7 percent attended unsubsidized private schools. By 1990, 32 percent of students attended private voucher schools. By 2009, enrollment in such schools had reached 48 percent. Adding in the 7 percent of students in elite private nonvoucher schools leaves a majority of Chilean students in private schools (see Figure 1).

The essential features of the national voucher system have remained in place for over three decades. The democratic governments in power since 1990 have chosen to focus on improving the quality of poor schools

In 1981 Chile began financing public and most private schools with vouchers, and private voucher schools currently account for over 50 percent of total enrollment.

Figure 1
Enrollment Share in Private and Public Schools (1979–2009)



Sources: Government of Chile, Ministry of Education, http://ded.mineduc.cl/DedPublico/archivos_de_datos and <http://www.simce.cl/index.php?id=448>, and authors' calculations.

through direct resource investments, while maintaining the organizational and funding components introduced in the 1980s.¹⁸

The data presented in Figures 2a and 2b suggest that the private voucher school sec-

tor is essentially a cottage industry. More than 70 percent of private voucher schools are independent schools that do not belong to a franchise. Private voucher school franchises, which are defined in Chile as schools

Figure 2a
Distribution of Primary Schools, by Private Voucher School Category (2008)

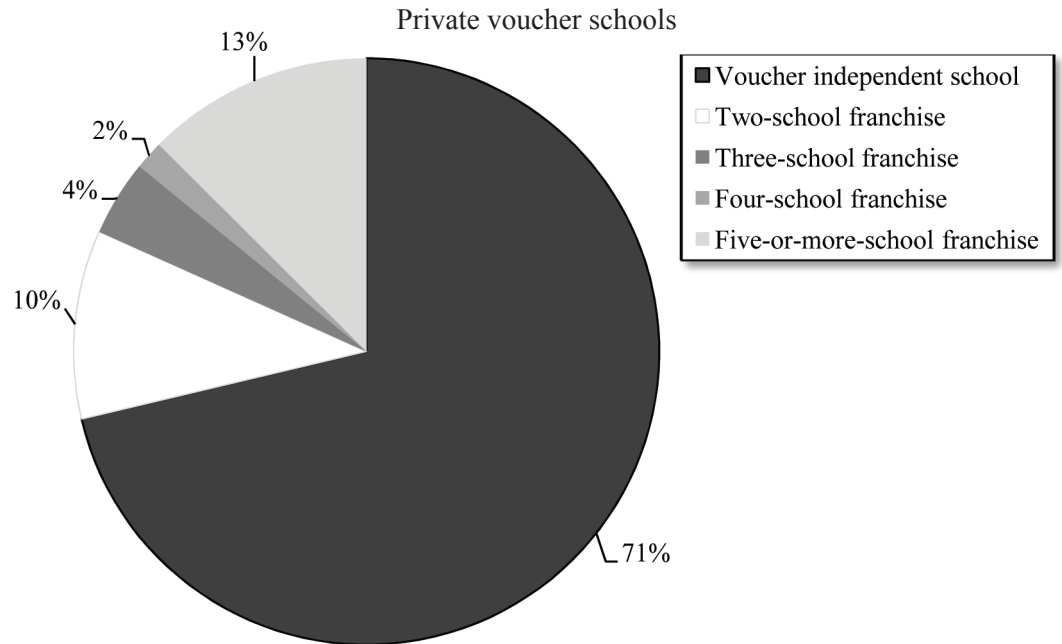
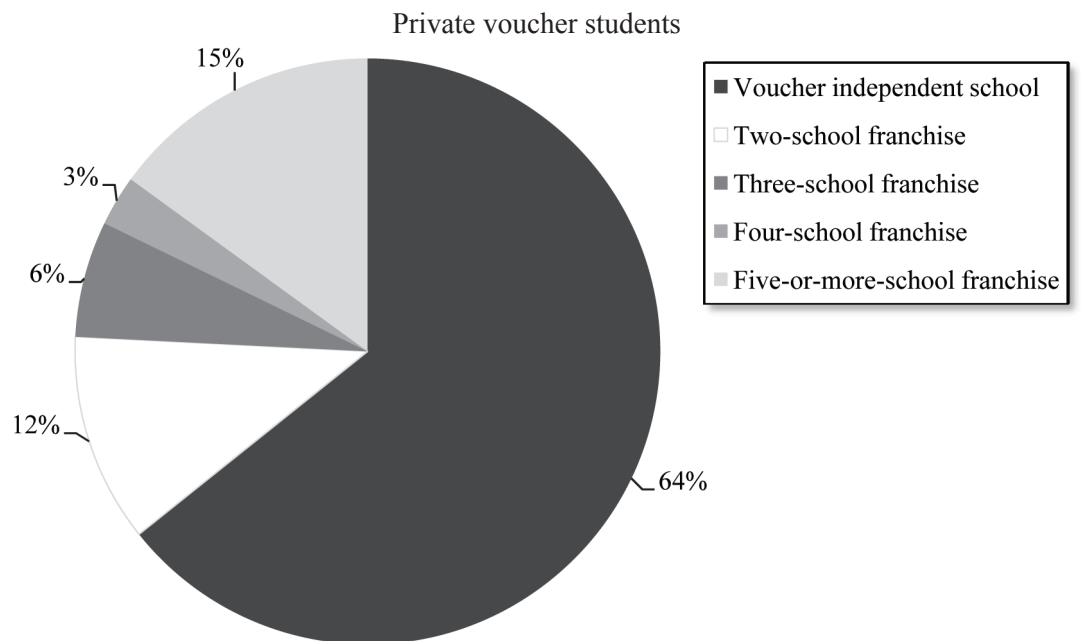


Figure 2b
Distribution of Primary Students, by Private Voucher School Category (2008)



Sources: Government of Chile, Ministry of Education, http://ded.mineduc.cl/DedPublico/archivos_de_datos and <http://www.simce.cl/index.php?id=448>, and authors' calculations.

that belong to a network of schools that are operated by the same legal private voucher school “owner” (*sostenedor*), account for about one-third of private voucher schools and enrollments. Although this percentage has remained relatively stable over time, there

is a slight downward trend in recent years, which is shown in Figures 3a and 3b. Most of the franchises are fairly small in scale, and almost 50 percent of primary private voucher franchise schools belong to franchises that have fewer than four schools.

Figure 3a
Distribution of Primary Schools, by Private Voucher School Category (2000–08)

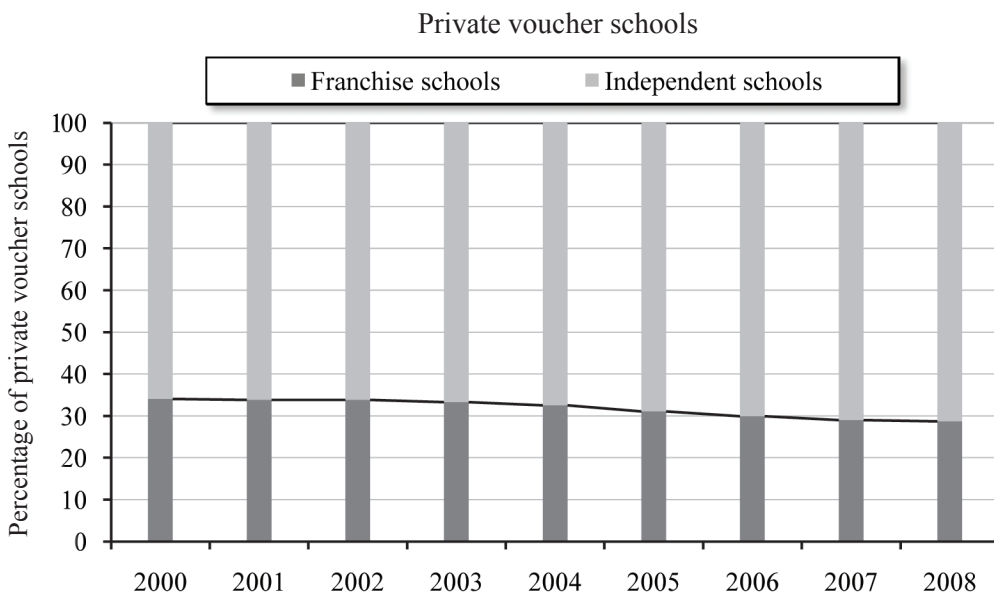
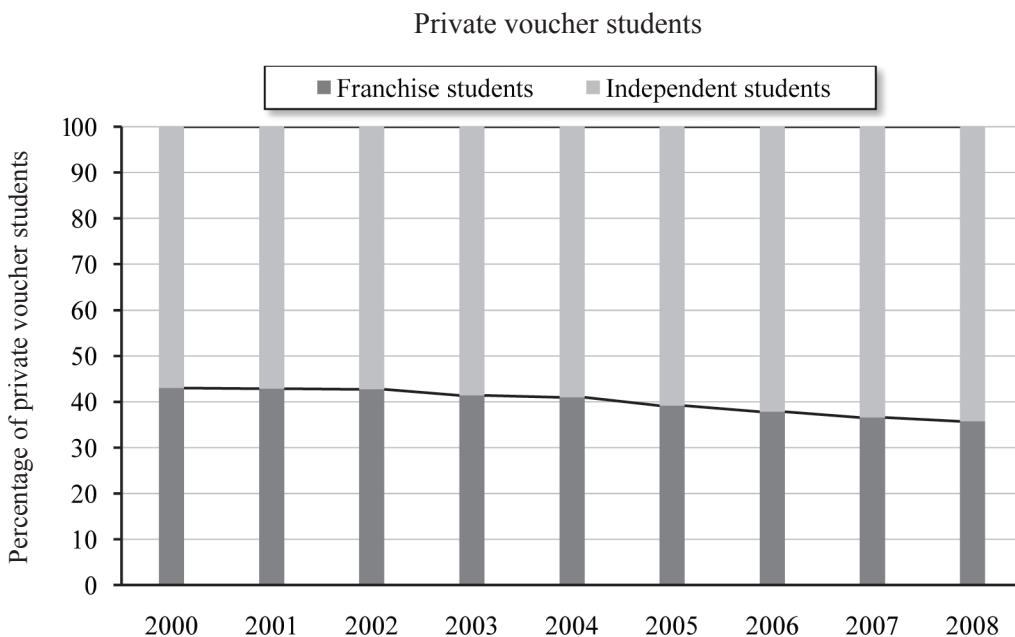


Figure 3b
Distribution of Primary Students, by Private Voucher School Category (2000–08)



Sources: Government of Chile, Ministry of Education, http://ded.mineduc.cl/DedPublico/archivos_de_datos and <http://www.simce.cl/index.php?id=448>, and authors’ calculations.

In this paper, we have only one public school category, while private voucher schools are classified according to whether they are independent or belong to a franchise.

Private voucher schools are diverse in membership. For-profit franchises, which are often controlled by a group of local entrepreneurs, in many cases with private shareholders,¹⁹ represent 42 percent of all franchise schools in Chile. These for-profit schools stand in varying degrees of contrast to independent for-profit voucher schools, most of which are owned and run by former public school teachers²⁰ and which account for about 88 percent of all independent schools.

On the other hand, nonprofit voucher schools, including Catholic,²¹ Protestant²² and secular organizations,²³ represent a significant percentage of the franchise schools (58 percent) but only 12 percent of independent schools (see Figures 4a and 4b). Thus, franchise schools are more likely to belong to religious congregations or nondenominational foundations.

Methodology

Below is a brief summary of the method-

ology we used to compare the performance of franchised, independent, and public schools in Chile. A more detailed technical exposition of our methodology is available in our forthcoming journal paper on this subject.²⁴

Empirical Strategy

Our empirical model builds on previous work by Patrick McEwan.²⁵ We hypothesize that student achievement, measured as student performance on standardized tests, can be modeled as a function of student socioeconomic characteristics (family background, home resources, and peer groups²⁶).

In this paper, we have only one public school category, while private voucher schools are classified according to whether they are independent or belong to a franchise.²⁷ Additionally, the latter are classified by size (number of schools) of the franchise to which they belong.

We can predict the achievement of a “typical” student in each school category. Here we use the mean characteristics of private inde-

Figure 4a
Distribution of Private Voucher Primary Schools, by Ownership Type and Franchise Status (2008)

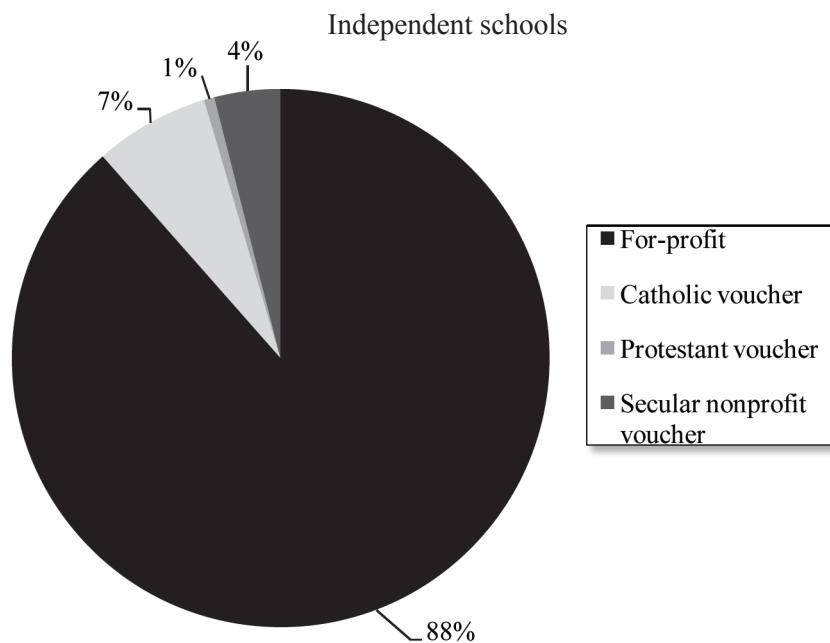
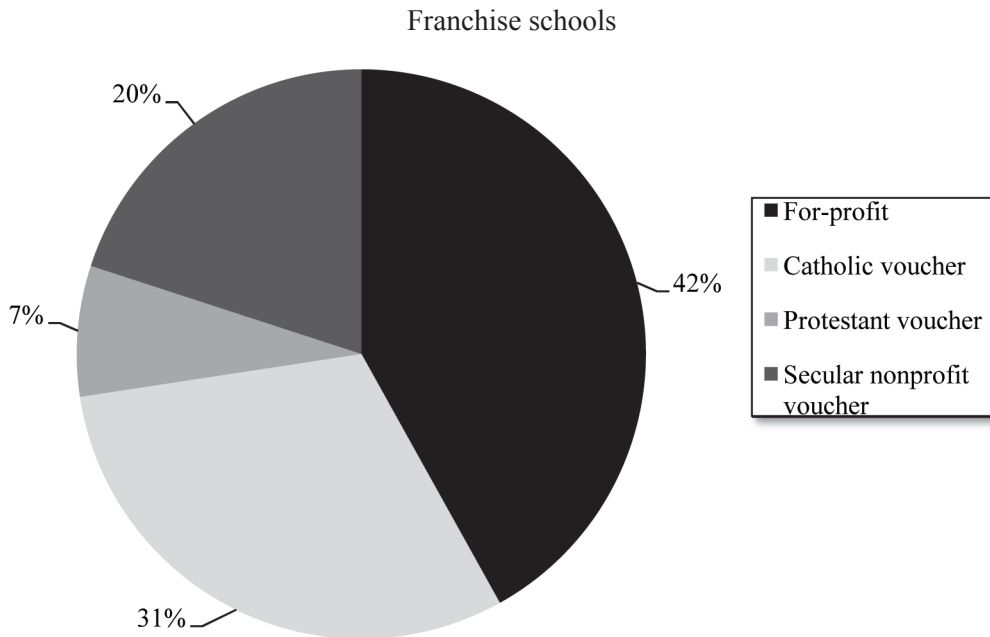


Figure 4b
Distribution of Private Voucher Primary Schools, by Ownership Type and Franchise Status (2008)



Sources: Government of Chile, Ministry of Education, http://ded.mineduc.cl/DedPublico/archivos_de_datos and <http://www.simce.cl/index.php?id=448>, and authors' calculations.

pendent school students as a definition of this “typical” student. To measure the difference in achievement between two school categories, we subtract one prediction from another. For example, we may estimate the corrected difference between private franchise voucher schools and private independent voucher schools. This provides an approximation of the expected increase (or decrease) in test scores for the average private independent school student if he or she were to attend a private franchise voucher school.

If the control variables perfectly account for student and peer demographics, then the above strategy yields unbiased results. However, there are variables that cannot be measured. For instance, private voucher schools may be able to select more qualified students, on average, than their public school counterparts (“school choice bias”). Similarly, the average student attending a private voucher school may be more likely to have other attributes (such as having parents who place a higher value on education)

than the average student attending public school (“parental choice bias”).

For these reasons, a simple comparison of student achievement in private voucher and public schools is unlikely to give unbiased estimates of the impact of private voucher schools on student achievement. In order to diminish “parental choice” selection bias,²⁸ we use the methodology proposed by Lung-Fei Lee.²⁹

Data

The previous models are estimated with student data from Chile’s national standardized test, *Sistema de Medición de la Calidad de la Educación* (the System of Measurement of the Quality of Education [SIMCE]), which assesses students in grades 4, 8 and 10 in language, mathematics, history, and geography, and in natural sciences in odd years. In 2008 SIMCE evaluated 245,607 fourth-graders, which represents 95 percent of total enrollment at that level. Student test scores are complemented with parent and

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After controlling for student and peer attributes and selection bias, we find a positive and significant private voucher franchise school achievement effect in Spanish and mathematics.

teacher questionnaires, which include socioeconomic and background information on the students, their families, peers, and schools.

Several independent variables characterize student demographics. These include the student's gender, parents' educational attainment, self-reported household income, and the number of non-school-related books in the student's home. We calculated student peer information by averaging individual student information over all of the students in a given classroom. We also introduce a variable to indicate the relative isolation of the school. Although not reported in the subsequent analysis, we also included regional dummy variables—relative to the Metropolitan Region—in the regressions to account for differences across regions.

Empirical Results

A brief summary of the results is provided in Figures 5a and 5b. The zero base line represents the performance of independent (i.e., nonfranchise) private voucher schools. The left panel presents the test score gap between public schools and private voucher independent schools. The right panel displays the gap between private voucher franchise schools and private voucher independent schools.³⁰ The first column in each panel presents the unadjusted difference in test scores. The subsequent columns present the differences after accounting for individual and peer attributes and selection bias. The test scores were standardized to a mean of 0 and a standard deviation of 1, so that the gaps are measured in terms of standard deviations.

The uncorrected estimates show that the Spanish and mathematics achievement of students that attend private voucher independent schools is higher, on average, than that of public schools students. However, the first column on the right panel also indicates a large unadjusted test score gap between private voucher franchise and private voucher independent schools.

After controlling for student and peer attributes and selection bias, we also find a positive and significant private voucher franchise school achievement effect in Spanish (0.086 standard deviations) and mathematics (0.094 standard deviations). The corrected test score gap between public and private voucher independent schools is negative and significant—but small—in the case of Spanish (−0.037 standard deviations) and negative but not significant in the case of mathematics.

These results provide some evidence of the effectiveness of private school franchises. However, a more precise analysis is needed to understand the optimal size of a franchise. Here we examine whether larger franchises are more effective than smaller franchises. Figures 6a and 6b summarize the results for private voucher schools, by subject and franchise size. The results show that, after controlling for student and peer attributes and selection bias, private voucher schools that belong to a franchise of four or more schools have a more substantial advantage (between 0.11 and 0.18 standard deviations) over private voucher independent schools than private voucher schools that belong to smaller franchises of two or three schools (0.07 to 0.09 standard deviations).³¹

To support these findings, we compared test scores in private voucher franchise and private voucher independent schools after controlling for whether or not the private voucher school owners were Catholic. It is essential to control for the Catholic school effect because previous research in Chile³² and in the United States³³ has demonstrated that Catholic schools, all else equal, outperform public schools and other private schools. By doing so, we avoid confounding the effect of attending a private franchise school with the effect of a Catholic school. The results (not reported) do not change the substantial findings of our previous analysis, which suggests that the positive private voucher franchise school effect is not related to the religious affiliation of the schools.³⁴

In order to test for consistency over time, we ran our model with 2002, 2005, and 2006

Figure 5a
Difference between School Types and Private Voucher Independent Schools for Student with Average Characteristics of Private Voucher Independent School Student (Fourth Grade 2008)

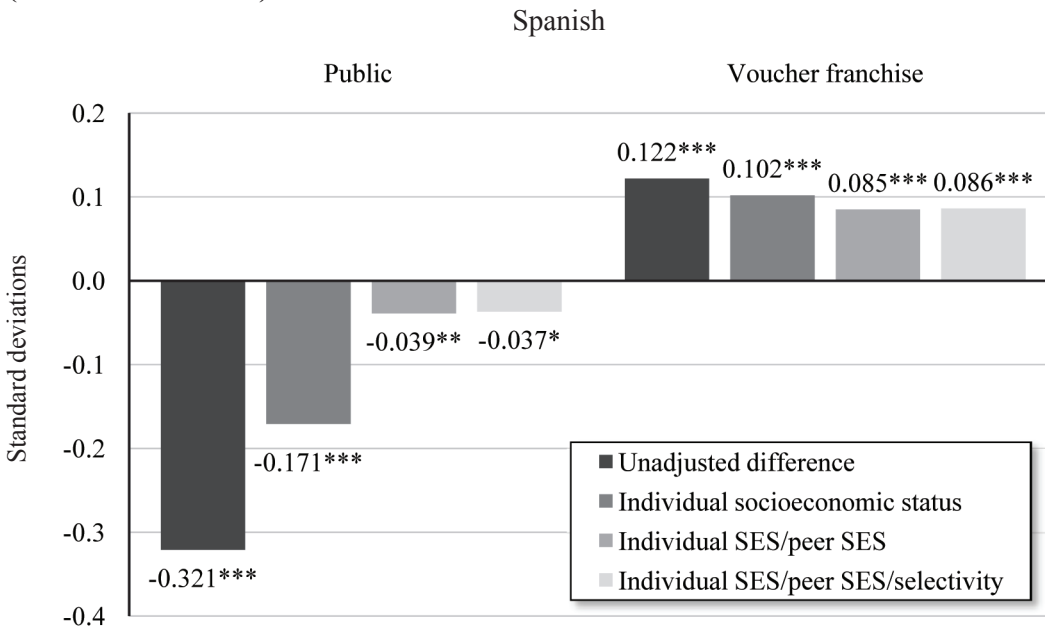
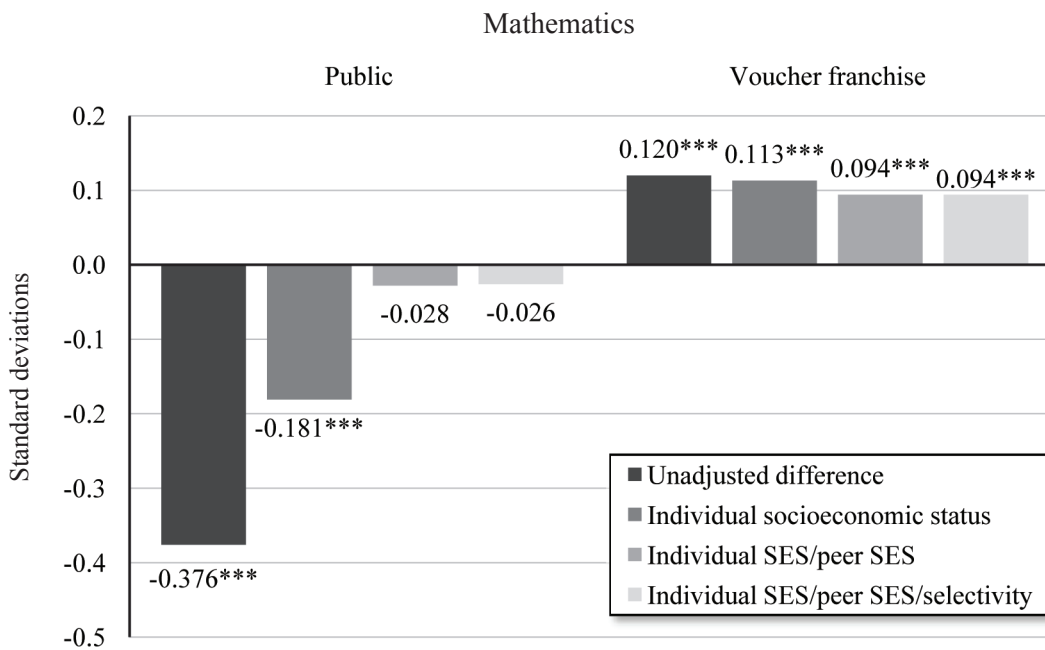


Figure 5b
Difference between School Types and Private Voucher Independent Schools for Student with Average Characteristics of Private Voucher Independent School Student (Fourth Grade 2008)



Sources: Government of Chile, Ministry of Education, http://ded.mineduc.cl/DedPublico/archivos_de_datos and <http://www.simce.cl/index.php?id=448>, and authors' calculations.

*** Significant at 1 percent; ** Significant at 5 percent; * Significant at 10 percent.

Figure 6a
Difference between School Types (by Franchise Size) and Private Voucher Independent Schools for Student with Average Characteristics of Private Voucher Independent School Student (Fourth Grade 2008)

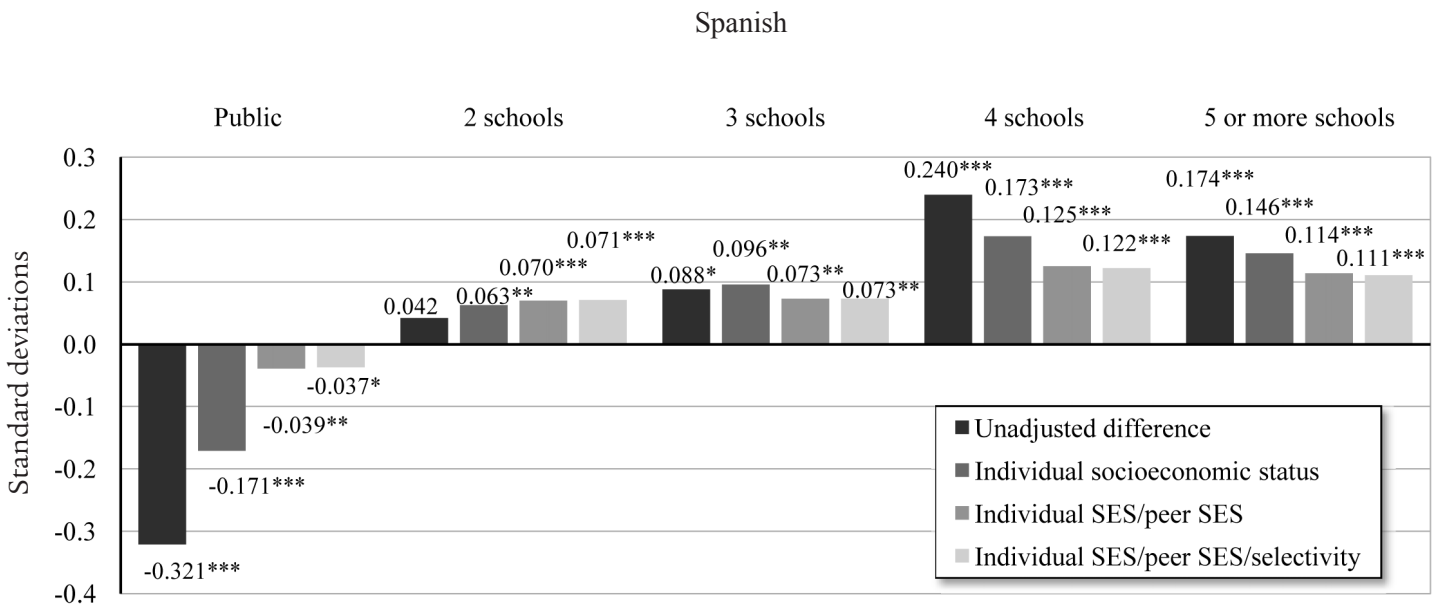
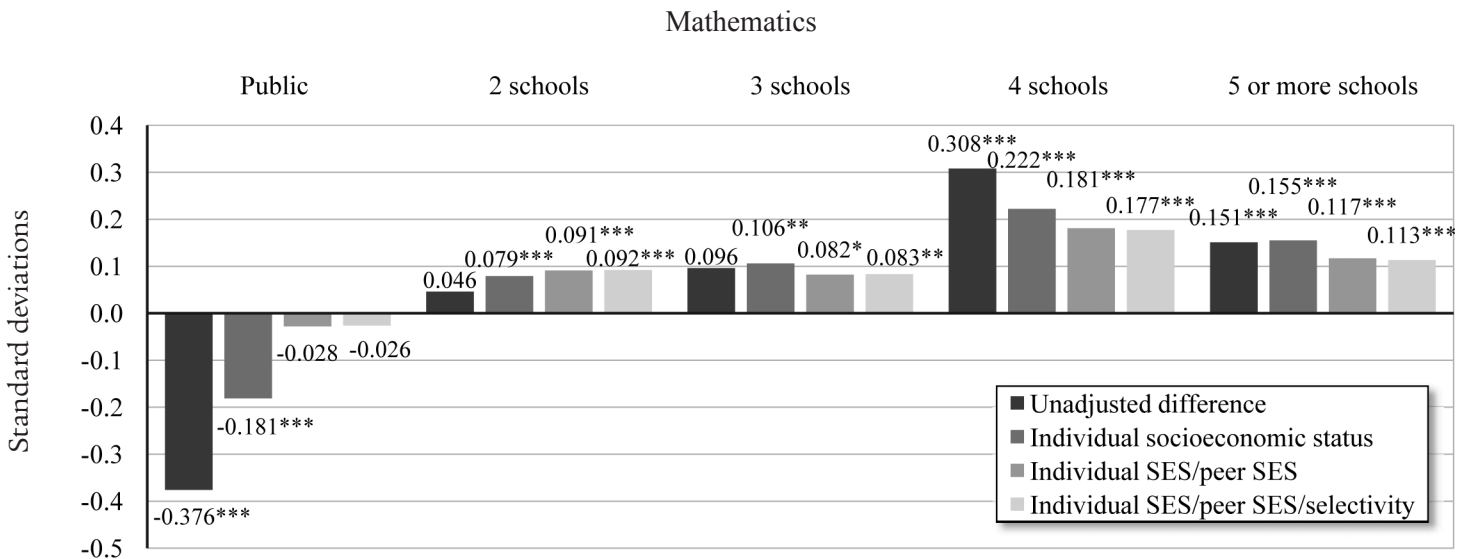


Figure 6b
Difference between School Types (by Franchise Size) and Private Voucher Independent Schools for Student with Average Characteristics of Private Voucher Independent School Student (Fourth Grade 2008)



Sources: Government of Chile, Ministry of Education, http://ded.mineduc.cl/DedPublico/archivos_de_datos and <http://www.simce.cl/index.php?id=448>, and authors' calculations.

*** Significant at 1 percent; ** Significant at 5 percent; * Significant at 10 percent.

fourth grade SIMCE test score data. This exercise (see Appendix) shows that our results are consistent over time. First, we find that the public/private voucher independent school achievement gap is very narrow, and in some cases not significant, indicating that there is not a significant difference between these types of schools once student and peer characteristics and selection bias are controlled for. Second, the results indicate that the positive effect associated with school franchises is between 0.086 and 0.108 standard deviations. Finally, we find that, all else equal, schools that belong to a franchise of four or more schools produce higher student achievement than schools that belong to smaller franchises (two or three schools).

Conclusions and Policy Implications

This paper compares the academic achievement of fourth graders in private voucher franchise, private voucher independent, and public schools in Chile. Controlling for individual and peer characteristics and selection bias, the initial results suggest that private voucher franchise school students consistently outperform comparable private voucher independent school students. Private voucher independent schools—by far the largest category of private voucher schools—produce similar test scores, all else equal, as public schools.

We also considered the effect of the size of private voucher school franchises. We find that, after controlling for individual and peer characteristics and selection bias, larger private school franchises (four or more schools) outperform smaller franchises (two or three schools). Student achievement is more than 0.10 of a standard deviation higher on the Spanish and mathematics tests. On the other hand, schools that belong to smaller franchises outperform private independent voucher schools, but the differences are smaller. Our results are consistent over time and after control-

ling for the effect of the religious affiliation of the school.

Some of the reasons that may explain the positive private school franchise effect include the substantial benefits of scale of educational professionals and administrators,³⁵ the bulk purchases of supplies and equipment, and the costs of implementing innovations in curriculum.³⁶ Private school franchises may also be more likely to benefit from access to credit and private investment than smaller private independent schools in Chile. In addition, some argue that being embedded within a larger organization facilitates transactions between parents, teachers, administrators, and students³⁷ and influences the development of stronger school communities.³⁸

Before holding these results up as proof that private school franchises are more effective than private independent schools, we need additional information on the factors that may influence a school owner to establish a franchise that may determine educational outcomes. For instance, high-achieving schools may be more likely to establish franchises (or to join a franchise) than low-quality schools. In a competitive schooling environment, low-quality schools may be unable to attract students and additional resources needed to expand operations. Private school franchises may also require superior technical skills to manage than small independent schools.

From a policy perspective, the results of this study also suggest that more information is needed on the factors that influence schools' incentives to establish franchises. For instance, how profitable are private school franchises? The data presented in Figure 2 reveal that 70 percent of private voucher schools do not belong to a franchise. Small private independent schools may not have incentives to establish a franchise if they are able to attract enough students and resources to cover the opportunity costs of operating a school. Survey evidence in Chile suggests that many of the independent private voucher school owners are former public

Some of the reasons that may explain the positive private school franchise effect include substantial benefits of scale for the bulk purchases of supplies and equipment and implementing innovations in curriculum.

Policies oriented to creating incentives for schools to establish franchises or to be managed by an organization that runs a network of schools may have the potential for increasing educational outcomes.

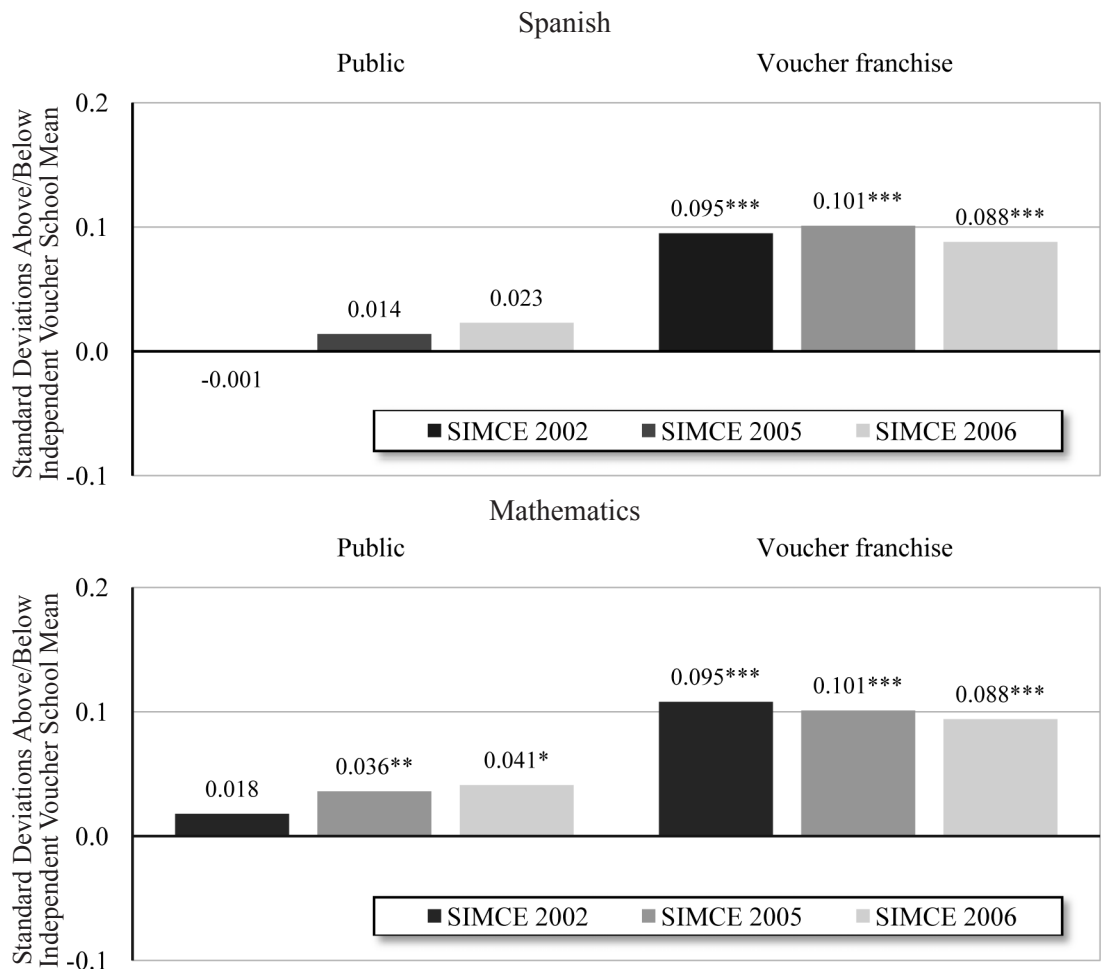
school teachers.³⁹ Data on the characteristics of school owners would improve our understanding of the complex decisions involved in establishing a private school franchise.

The results of this paper offer some insights for the debate in the United States on school vouchers, the scale of operations of public and private schools, and on the benefits of education management organizations. The findings provide some grounds for optimism about the effects of school vouchers and some (but not all) categories of

private schools on student achievement. For instance, policies oriented to create incentives for schools to establish franchises or to be managed by an organization that runs a network of schools may have the potential for increasing educational outcomes. However, the results also provide grounds for caution on the flooding of the educational market with low-quality for-profit independent schools. We do not find significant differences in achievement between this group of schools and public schools.

Appendix

Figure A1
Test Score Gap after Controlling for Student and Peer Attributes and Selection Bias for Different SIMCE^a Databases (Fourth Grade)



Sources: Government of Chile, Ministry of Education, http://ded.mineduc.cl/DedPublico/archivos_de_datos and <http://www.simce.cl/index.php?id=448>, and authors' calculations.

^aSystem of Measurement of the Quality of Education.

*** Significant at 1 percent; ** Significant at 5 percent; * Significant at 10 percent.

Notes

This policy analysis is based on the results of our forthcoming paper “The Effectiveness of Private School Franchises in Chile’s National Voucher Program,” *School Effectiveness and School Improvement*, pp. 1–42.

1. John E. Chub, “The Private Can Be Public,” *Education Next*, Spring 2001.
2. Robert McMeekin, “Networks of Schools,” *Education Policy Analysis Archives* 12, no. 16 (May 2003), <http://epaa.asu.edu/epaa/v11n16/>. McMeekin argues that being part of a franchise provides a sharing experience within the network and facilitates the flow of information to teachers and administrators on best practices.
3. Priscilla Wohlstetter et al., “Improving Service Delivery in Education through Collaboration: An Exploratory Study of the Role of Cross-Sectoral Alliances in the Development and Support of Charter Schools,” *Social Science Quarterly* 85 (2004): 1078–96. Wohlstetter et al. maintain, on the basis of their research of charter school partnerships in the United States, that well-established charter school networks can build credibility for fundraising more easily than small independent charter schools.
4. William C. Symonds, “For-Profit Schools: They’re Spreading Fast. Can Private Companies Do a Better Job of Educating America’s Kids?” *Business Week*, February 7, 2000.
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6. Carrie Lips, “Edupreneurs: A Survey of For-Profit Education,” Cato Institute Policy Analysis no. 386, November 20, 2000, p. 2.
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9. Clive Belfield and Henry M. Levin, “Vouchers and Public Policy: When Ideology Trumps Evidence,” *American Journal of Education* 111 (2005): 548–67.
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13. Eileen Foley, “Approaches of Bill & Melinda Gates Foundation-Funded Intermediary Organizations to Structuring and Supporting Small High Schools in New York City,” 2010, <http://www.eric.ed.gov/PDFS/ED510236.pdf>.
14. Matthew Andrews, William Duncombe, and John Yinger, “Revisiting Economies of Size in American Education: Are We Any Closer to a Consensus?” *Economics of Education Review* 21 (2002): 245–62. In their extensive review of the literature, Andrews, Duncombe, and Yinger conclude: “both the claims of supporters of consolidation and detractors that claim small is beautiful have not adequately been tested using good evaluation methods.”
15. Brian Gill et al., *State Takeover, School Restructuring, Private Management, and Student Achievement in Philadelphia* (Washington: Rand Corporation, 2007).
16. American Institutes for Research (AIR) and SRI International, “Early College High School Initiative 2003–2005 Evaluation Report,” 2006, http://www.earlycolleges.org/Downloads/ECHS_Eva_2003-2005.pdf; Howard S. Bloom, Saskia Levy Thompson, and Rebecca Unterman, “Transforming the High School Experience: How New York City’s New Small Schools Are Boosting Student Achievement and Graduation Rates,” 2010, <http://www.mdr.org/publications/560/full.pdf>.
17. Organization for Economic Cooperation and Development, *Education at a Glance* (Paris: OECD, 2003).
18. See Sergio Martinic and Gregory Elacqua, *Fin del Ciclo. Cambios en la Gobernanza del Sistema Educativo* (Santiago, Chile: UNESCO, 2010). See also Organization for Economic Cooperation and Development, *Revisión de Políticas Nacionales de Educación Chile* (Paris: OECD, 2004). Only two significant modifications have been intro-

- duced since 1980. The first was in 1994, when the ministry instituted a shared financing scheme that allowed all private voucher schools—both elementary and secondary—and public secondary schools to charge limited tuition. See Pedro Montt et al., *Hacia un Sistema Escolar Descentralizado, Sólido y Fuerte: El Diseño y las Capacidades Hacen la Diferencia* (Santiago, Chile: Ministerio de Educación de Chile, 2006). The second was in 2008, when the Chilean legislature enacted the Adjusted Voucher Law (Ley de Subvención Escolar Preferencial or SEP). The SEP law recognizes that it is more costly to educate disadvantaged students by introducing an extra per-pupil subsidy (50 percent over the base voucher) for students of low socioeconomic status. See Gregory Elacqua, Úrsula Mosqueira, and Humberto Santos, “La Toma de Decisiones de un Sostenedor: Análisis a Partir de la Ley SEP,” 2009, <http://www.cpce.cl/publicaciones/serie-en-foco-educacion>, for details on the Ley SEP.
19. Gregory Elacqua, “The Politics of Education Reform in Chile: When Ideology Trumps Evidence” (paper presented at the Latin American Studies Association Annual Conference, Montreal, Canada, August, 2007).
20. Javier Corvalán, Gregory Elacqua and Felipe Salazar, “El Sector Particular Subvencionado de la Educación Chilena: descripción, tipologización, análisis de su dinámica y percepciones frente a las nuevas regulaciones,” 2008, http://ded.mineduc.cl/mineduc/ded/documentos/FONIDE_Informe_CIDE_UDP.pdf.
21. Catholic voucher schools are operated by religious orders, parishes, archdioceses, and religious foundations.
22. Protestant church schools include Methodist, Baptist, Seventh Day Adventist, Anglican, Lutheran, and Presbyterian churches. There are four private voucher schools of other religious orientations.
23. Most of the secular nonprofit schools are branches of foundations that were created for other specific tasks, such as the Rural Social Development Corporation.
24. Gregory Elacqua, Dante Contreras, Felipe Salazar, and Humberto Santos, “The Effectiveness of Private School Franchises in Chile’s National Voucher Program,” *School Effectiveness and School Improvement*, forthcoming, pp.1–42.
25. Patrick McEwan, “The Effectiveness of Public, Catholic, and Non-religious Private Schools in Chile’s Voucher System,” *Education Economics* 9 (2001): 103–28.
26. We include peer group controls because a body of literature has documented the positive spillover effects of having high-ability peers and the negative effects of being surrounded by disadvantaged students. See, for instance, Ron W. Zimmer and Eugenia F. Toma, “Peer Effects in Private and Public Schools across Countries,” *Journal of Policy Analysis and Management* 19 (2000): 75–92.
27. We do not include the private nonvoucher schools in this analysis. This set of schools charge high tuition, do not receive per-pupil subsidies, and are mainly focused on high-income students. In a previous version of this paper, we included private nonvoucher schools in our analysis. The results (available upon request) do not change the substantive conclusions reported here.
28. In order to control for “school choice bias,” information on school selection practices would be required.
29. Lung-Fei Lee, “Generalized Econometric Models with Selectivity,” *Econometrica* 51 (1983): 507–12.
30. We use private independent schools as the omitted reference category because we are interested in comparing private franchise and independent school outcomes.
31. In a separate analysis not reported here, we excluded the largest private voucher school franchise in Chile that has 147 schools to make sure it was not confounding our findings. The results (available upon request) do not change the substantive conclusions reported here.
32. McEwan.
33. Anthony S. Bryk, Valerie E. Lee, and Peter B. Holland, *Catholic Schools and the Common Good* (Cambridge, MA: Harvard University Press, 1993).
34. In addition, our findings are substantively similar when we only consider urban schools in the Metropolitan Region of Santiago. These results are available upon request.
35. Chubb.
36. William Duncombe and John Yinger, “Does School District Consolidation Cut Costs?” *Education Finance and Policy* 2 (2007): 341–76.
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