

To Profit or not to Profit? Evidence from Chile's For-profit Voucher Schools

Bárbara Boggiano^{*a}, Cristián Sánchez^{†b}, and Rocío Valdebenito ^{‡a}

^aUniversidad Alberto Hurtado, Department of Economics

^bBanco Central de Chile

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Abstract

This note examines whether for-profit management affects educational outcomes in Chile's universal voucher system. Using administrative panel data for all primary voucher schools from 2010–2014, we compare for-profit and nonprofit schools along inputs and student performance. For-profit schools serve more disadvantaged students and use lower-cost inputs, such as less-qualified teachers, but provide more instruction hours and smaller classes. Once observable characteristics are controlled for, we find no significant differences in standardized test scores between for-profit and nonprofit schools. These results suggest that in this context, allowing for-profit management neither improves nor harms measured educational outcomes.

Keywords: for-profit schools, voucher system, education policy, school choice

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^{*}Email address: bboggiano@uahurtado.cl

[†]Email address: csanchez@bcentral.cl

[‡]Email address: rvaldebeni@uahurtado.cl

All errors are our own.

1 Introduction

For-profit involvement in education remains a contested issue. Critics argue that profit-maximizing behavior may reduce service quality when firms are entrusted with public resources, particularly in compulsory schooling (Chung, 2012; Cellini & Chaudhary, 2014). This concern has shaped regulatory responses worldwide, leading many jurisdictions to restrict or ban for-profit providers in public education systems (Cellini et al., 2020; Singleton, 2017). Empirically, the evidence is mixed. Some studies find for-profit schools achieve comparable or superior performance (Anand et al., 2006; Gallego, 2013; Singleton, 2017), while others indicate inferior outcomes or concerning practices such as cream-skimming or input substitution (McEwan & Carnoy, 2000; Elacqua, 2011; Sahlgren, 2011; Fajnzylber & Lara, 2023).

Chile offers a unique institutional setting to analyze these issues. Since 1981, its universal voucher system has provided per-student subsidies to public and private schools alike, with parents free to choose schools regardless of residence (Elacqua et al., 2011). Roughly two-thirds of private subsidized schools operate under for-profit status (Bravo, Medrano, & Flores, 2010), and unlike in many countries, these institutions can legally distribute profits while operating under the same curricular and accountability requirements as nonprofits (Lara et al., 2011). This context enables direct comparison of nonprofit and for-profit schools within a common funding and regulatory regime.

Prior Chilean studies present conflicting findings. Some report that for-profit schools achieve higher test scores (Idrovo, 2007; Paredes & Pinto, 2009), while others highlight their potential role in increasing socioeconomic segregation (Quezada-Hofflinger, 2008) or manipulating administrative records to inflate performance indicators (Fajnzylber & Lara, 2023). Importantly, studies also show that apparent performance differences often vanish when controlling for student composition (Contreras et al., 2010), and some evidence suggests for-profit schools may operate more efficiently by achieving comparable outcomes at lower per-pupil costs (McEwan & Carnoy, 2000).

This note contributes to the literature in several ways. First, while previous studies have focused on single outcomes such as test scores (McEwan, 2001; Elacqua et al., 2009) or resource allocation (McEwan & Carnoy, 2000), we provide a comprehensive analysis of student demographics, input allocation, and academic outcomes. Second, we leverage detailed administrative panel data covering the full universe of primary voucher-subsidized schools from 2010 to 2014, overcoming limitations of earlier studies based on partial samples (Sapelli, 2002) or cross-sectional designs (Contreras et al., 2010). Third, our estimation strategy incorporates municipality-by-year fixed effects, offering more rigorous control for local market conditions than most prior research (Drago & Paredes, 2011). Finally, by examining how for-profit schools achieve comparable outcomes despite serving more disadvantaged students and using lower-cost inputs, we shed light on efficiency-equity tradeoffs central to the school choice debate (Tokman, 2002; Quezada-Hofflinger, 2008).

Our results reveal three key patterns. First, for-profit schools serve a more disadvantaged student population, challenging claims of widespread cream-skimming (Parry, 1996; Hsieh & Urquiola, 2006). Second, they allocate more resources per student but tend to use lower-cost inputs, such as less-qualified teachers, consistent with efficiency-seeking behavior (Behrman et al., 2016). Third, once observable characteristics and local market conditions are accounted for, there is no significant difference in standardized test scores between for-profit and nonprofit schools (Sapelli & Vial, 2003).

These findings suggest that, within Chile’s institutional framework of universal vouchers and centralized accountability, for-profit management neither harms nor enhances measured educational outcomes relative to nonprofit provision. While concerns about profit motives in education remain valid, evidence from Chile indicates that ownership form alone is not a sufficient predictor of school quality or student achievement (Gallego, 2013; Contreras et al., 2010).

2 Empirical Specification

We use administrative panel data covering all Chilean primary schools that received voucher subsidies from 2010 to 2014. The dataset links eight sources: school registries,¹ enrollment summaries,² teacher censuses,³ SIMCE test score databases,⁴ student background surveys,⁵ targeted voucher registries,⁶ and for-profit status indicators from tax filings.⁷

A key contribution of this study is the use of official tax classification data to identify schools’ management type. Unlike previous research relying on survey self-reports or indirect proxies, our for-profit indicator is based on legal registration status recorded by the Chilean Internal Revenue Service (SII). This classification is binding for profit distribution rules, ensuring accurate identification of ownership form and eliminating potential reporting biases.

The final sample includes over 3,500 primary schools per year, representing approximately 93% of total national primary enrollment. This figure covers all public and private voucher-subsidized schools; private fee-paying institutions, which serve the remaining 7% of students, are excluded because they receive no voucher funding and charge tuition far above voucher levels (Bravo, Mukhopadhyay, &

¹Ministry of Education registry, 2010–2014, includes administration type, tuition, rural status, religious affiliation, and education levels offered.

²Enrollment by gender, level, and class type (single-grade vs. multigrade), 2010–2014.

³Teacher demographics, education credentials, years of experience, contract type, and multi-school assignments, 2010–2014.

⁴SIMCE (*Sistema de Medición de la Calidad de la Educación*) standardized test scores for 4th grade students, aggregated at school level, 2010–2013.

⁵SIMCE parent/tutor surveys on household income, parental education, indigenous identification, and school choice motivations, 2010–2013.

⁶Introduced in 2008, the Preferential School Subsidy (SEP) provides higher per-student funding for socioeconomically disadvantaged students and additional resources based on their concentration within schools. Participation is voluntary and subject to specific academic and administrative commitments (Mizala & Torche, 2013). We use the SEP records of schools and students eligible for targeted subsidies, 2010–2014.

⁷Derived from SII (*Servicio de Impuestos Internos*) records for 2011 and 2013. Schools classified as *Sociedades con Fines de Lucro* are coded as for-profit; *Corporaciones sin Fines de Lucro* or *Fundaciones* as nonprofit. Status is assumed constant within 2010–2012 and 2013–2014.

Todd, 2010). Key outcome variables include the log of pupil-teacher ratio, log of instruction hours per student, log of average class size, and standardized test scores in verbal and mathematics. For input-related regressions, control variables include the share of multigrade classes, an indicator for participation in the targeted voucher program (SEP), the percentage of disadvantaged students, and average years of education of students' mothers and fathers. For test score regressions, additional controls are added: the above variables plus pupil-teacher ratio, instruction hours per student, class size, average teacher experience, and the share of teachers without a teaching diploma. All regressions include time-invariant school characteristics and municipality-by-year fixed effects to account for local labor market conditions and policy environments.

We estimate reduced-form models of the form:

$$y_{jkt} = \beta_0 + \beta_1 \text{ForProfit}_{jk} + X_{jkt} \beta_2 + \nu_k \times \delta_t + \varepsilon_{jkt},$$

where y_{jkt} is school j 's outcome in municipality k and year t , ForProfit_{jk} is a binary indicator of for-profit management, X_{jkt} is a vector of school controls, and $\nu_k \times \delta_t$ denotes municipality-by-year fixed effects. Standard errors are clustered at the municipality level. Identification relies on within-municipality-year comparisons of schools differing in management type but exposed to the same local funding and regulatory environment.

3 Results

Table 1 summarizes raw differences across school types. Columns (1)–(3) report differences between public and private schools overall, providing context on how the private sector compares to the public system. Columns (4)–(6) focus on differences between nonprofit and for-profit private schools, which constitute the central comparison in this study. For-profit schools are smaller, more rural, and charge lower tuition (Panel A). They provide more instruction hours and operate with smaller class sizes, although they also have a higher share of multigrade classes (Panel B). In terms of teacher characteristics, for-profit schools employ less-qualified teachers, with a greater proportion holding vocational training degrees and a higher prevalence of short-term contracts (Panel C). Their student populations are more disadvantaged on average, with lower parental education levels and household income (Panel D). Lastly, raw test scores are lower in for-profit schools relative to nonprofit schools (Panel E).

Regression results in Table 2 show that, conditional on school characteristics and municipality-year fixed effects, for-profit schools have significantly lower pupil-teacher ratios (coefficient = -0.055, $p\text{-value} < 0.01$), provide more instruction hours per student (coefficient = +0.055, $p\text{-value} < 0.01$), and operate with smaller classes (coefficient = -0.162, $p\text{-value} < 0.01$). In contrast, when examining

academic outcomes, we find that the raw nonprofit advantage in test scores disappears once inputs and student background variables are controlled for (in Table 3). The estimated coefficients for for-profit status are small and statistically non-significant in both verbal (coefficient = -0.040, *p-value* = 0.26) and math (coefficient = 0.007, *p-value* = 0.82) test score regressions.

Overall, these results indicate that while for-profit schools differ substantially in student composition and input mix, these differences do not translate into worse academic performance. Within Chile’s universal voucher system, for-profit management appears neither superior nor detrimental to measured educational outcomes.

4 Conclusion

For-profit school management in Chile has long been at the center of public debate. Critics contend that profit motives divert resources away from educational quality, while advocates emphasize increased parental choice and managerial flexibility. Using comprehensive administrative panel data covering all voucher-subsidized primary schools from 2010–2014, our analysis provides new insights that refine this debate.

First, we find that for-profit schools maintain lower pupil-teacher ratios and provide more instruction hours per student. This pattern suggests a more complex approach to resource allocation than earlier studies indicating pure cost-minimization behavior (McEwan & Carnoy, 2000). However, our data also show greater reliance on teachers with vocational training degrees and short-term contracts, indicating trade-offs in input quality.

Second, although raw test scores are lower in for-profit schools, these differences disappear once we control for student background and school inputs. This aligns with prior evidence suggesting that performance gaps between public and private subsidized schools in Chile are largely attributable to compositional differences rather than management form alone (Contreras et al., 2010). Our results extend this literature by showing that for-profit and nonprofit private schools also achieve comparable outcomes once differences in inputs and student profiles are accounted for.

Third, our findings challenge common concerns about cream-skimming. Whereas earlier studies suggested that private voucher schools might select more advantaged students (Parry, 1996; Hsieh & Urquiola, 2006), we find that for-profit schools serve a more disadvantaged student population—measured by lower parental education and income—and are more likely to operate in rural areas. One potential explanation is the structure of the Preferential School Subsidy (SEP), introduced in 2008, which allocates additional funding based on the proportion of disadvantaged students enrolled. This may create incentives for voucher-funded schools to actively serve lower-SES populations. While our results are consistent with this pattern, we cannot directly test this mechanism. Nonetheless, this interpretation aligns with recent concerns about reversed selection dynamics under the current

funding regime (Fajnzyblber & Lara, 2023).

Overall, our findings suggest that for-profit schools, while differing in input mix and student composition, can achieve academic outcomes comparable to those of nonprofit schools. They appear to operate with distinct resource strategies and serve more disadvantaged populations, particularly in rural areas. These results highlight the importance of considering both performance and access dimensions when evaluating the role of for-profit actors within mixed education systems.

References

- Anand, P., Mizala, A., & Repetto, A. (2006). Using School Scholarships to Estimate the Effect of Government Subsidized Private Education on Academia Achievement in Chile. *Económica*(220).
- Behrman, J. R., Tincani, M. M., Todd, P. E., & Wolpin, K. I. (2016). Teacher Quality in Public and Private Schools Under a Voucher System: The Case of Chile. *Journal of Labor Economics*, 34(2), 319–362.
- Bravo, D., Medrano, P., & Flores, B. (2010). ¿Se premia la habilidad en el mercado laboral docente? ¿Cuánto impacta en el desempeño de los estudiantes? *Working Papers wp327, University of Chile, Department of Economics*.
- Bravo, D., Mukhopadhyay, S., & Todd, P. E. (2010). Effects of School Reform on Education and Labor Market Performance: Evidence from Chile's Universal Voucher System. *Quantitative economics*, 1(1), 47–95.
- Cellini, S. R., & Chaudhary, L. (2014). The Labor Market Returns to a For-profit College Education. *Economics of Education Review*, 43, 125–140.
- Cellini, S. R., Darolia, R., & Turner, L. J. (2020). Where do students go when for-profit colleges lose federal aid? *American Economic Journal: Economic Policy*, 12(2), 46–83.
- Chung, A. S. (2012). Choice of For-profit College. *Economics of Education Review*, 31(6), 1084–1101.
- Contreras, D., Sepulveda, P., & Cabrera, S. (2010). The effects of Lengthening the School Day on Female Labor Supply: Evidence from a Quasi-experiment in Chile. *Serie Documentos de Trabajo*.
- Drago, J. L., & Paredes, R. D. (2011). The quality gap in chile's education system. *Cepal Review*, 2011(104), 161–174.
- Elacqua, G. (2011). *For-Profit Schooling and the Politics of Education Reform in Chile: When Ideology Trumps Evidence*.

- Elacqua, G., Contreras, D., Salazar, F., & Santos, H. (2011). The Effectiveness of Franchises and Independent Private Schools in Chile's National Voucher Program. *School Effectiveness and School Improvement*, 22(3), 237–263.
- Elacqua, G., Mosqueira, U., & Santos, H. (2009). La Toma de Decisiones de un Sostenedor: Análisis a Partir de la Ley SEP. *En foco – Educación*(1), 1–29.
- Fajnzylber, E., & Lara, B. (2023). Attendance Manipulation and Efficiency in Chile's School Voucher system. *Economics of Education Review*, 95, 102426.
- Gallego, F. (2013). When Does Inter-school Competition Matter? Evidence from the Chilean "Voucher" System. *The BE Journal of Economic Analysis & Policy*, 13(2), 525–562.
- Hsieh, C.-T., & Urquiola, M. (2006). The Effects of Generalized School Choice on Achievement and Stratification: Evidence from Chile's Voucher Program. *Journal of public Economics*, 90(8-9), 1477–1503.
- Idrovo, B. (2007). *¿Son las Escuelas Particulares Subvencionadas Mejores que las Municipales? Estimación de la Ecuación de Logro Escolar para Chile* (Tesis de Magíster). Universidad de Chile, Santiago, Chile.
- Lara, B., Mizala, A., & Repetto, A. (2011). The Effectiveness of Private Voucher Education: Evidence from Structural School Switches. *Educational Evaluation and Policy Analysis*, 33(2), 119–137.
- McEwan, P. J. (2001). The Effectiveness of Public, Catholic, and Non-Religious Private Schools in Chile's Voucher System. *Education Economics*, 9(2), 103–128.
- McEwan, P. J., & Carnoy, M. (2000). The Effectiveness and Efficiency of Private Schools in Chile's Voucher System. *Educational Evaluation and Policy Analysis*, 22(3), 213–239.
- Mizala, A., & Torche, F. (2013). *¿logra la subvención escolar preferencial igualar los resultados educativos?* (Documento de Referencia N° 9). Espacio Público. Retrieved from <https://www.espaciopublico.cl/wp-content/uploads/2021/05/19.pdf>
- Paredes, R. D., & Pinto, J. I. (2009). ¿El Fin de la Educación Pública en Chile? *Estudios de Economía*, 36(1), 47–66.
- Parry, T. R. (1996). Will Pursuit of Higher Quality Sacrifice Equal Opportunity in Education? An Analysis of the Education Voucher System in Santiago. *Social Science Quarterly*, 77(4), 821–841.
- Quezada-Hofflinger, A. (2008). *School Choice and Equity: The Impact of Voucher Schools on Educational Inequality in the Chilean case* (M.A. thesis). The University of Texas at Austin, Lozano Long Institute of Latin American Studies.

- Sahlgren, G. H. (2011). Schooling for Money: Swedish Education Reform and the role of the Profit Motive. *Economic Affairs*, 31(3), 28–35.
- Sapelli, C. (2002). La Economía de la Educación y el Sistema Educativo Chileno. *Cuadernos de Economía*, 39, 281–296.
- Sapelli, C., & Vial, B. (2003). Peer Effects and Relative Performance of Voucher Schools in Chile. *Documento de Trabajo, Instituto de Economía, Pontificia Universidad Católica de Chile*.
- Singleton, J. D. (2017). Putting Dollars Before Scholars? Evidence from For-Profit Charter Schools in Florida. *Economics of Education Review*, 58, 43–54.
- Tokman, A. (2002). *Is Private Education Better? Evidence from Chile* (Tech. Rep.). Working Paper 147. Central Bank of Chile.

Tables

Table 1: Summary Statistics by Type of School

	public (1)	private (2)	diff (3)	nonprofit (4)	for-profit (5)	diff (6)
<i>A. School Characteristics</i>						
enrollment	169.59	297.34	127.75***	388.12	261.39	-126.73***
monthly tuition (Ch\$)	0	14,009	14,009***	15,099	13,561	-1,538***
secular (%)	50.06	42.95	-7.11***	17.21	53.52	36.31***
participates in targeted voucher (%)	98.38	68.19	-30.19***	67.24	68.57	1.33*
rural (%)	62.56	24.63	-37.93***	16.50	27.84	11.34***
<i>B. School Inputs</i>						
pupil-teacher ratio	11.78	16.93	5.15***	17.89	16.56	-1.33***
instruction hours per student	4.08	2.21	-1.88***	2.06	2.27	0.21***
class size	17.57	26.27	8.70***	29.88	24.84	-5.04***
% multigrade classes	30.70	13.43	-17.27***	6.90	16.02	9.13***
<i>C. Teacher Characteristics</i>						
institution attended: college (%)	86.2	86.75	0.55***	88.35	86.10	-2.25***
institution attended: technical/vocational (%)	8.40	7.53	-0.86***	6.73	7.86	1.13***
out-of-field degree	4.24	5.30	1.06***	4.57	5.59	1.02***
type of contract: long-term (%)	56.18	64.00	7.82***	68.76	62.13	-6.63***
type of contract: short-term (%)	43.83	36.02	-7.81***	31.26	37.89	6.63***
years of experience	17.83	12.52	-5.31***	13.26	12.22	-1.04***
<i>D. Student Characteristics</i>						
% disadvantaged	73.00	58.25	-14.74***	54.22	59.85	5.64***
mother's years of education	8.96	10.83	1.86***	11.45	10.59	-0.86***
father's years of education	8.86	10.82	1.96***	11.38	10.61	-0.78***
<i>E. Test Scores</i>						
verbal score	-0.43	0.04	0.47***	0.31	-0.07	-0.39***
math score	-0.08	0.34	0.42***	0.59	0.23	-0.36***
Number of Schools	5113	3662		1079	2583	

Notes: This table presents descriptive statistics for the analytical sample, disaggregated by school type: municipal (public), private-voucher non-profit, and private-voucher for-profit schools. All variables are averaged across the full panel period for each school between 2010 and 2014. Panel A reports school characteristics: enrollment, monthly tuition, percentage of secular schools, an indicator variable of whether the school participates in the voucher program, and percentage of rural. Panel B reports school-level input indicators: the pupil-teacher ratio, instruction hours per student, average class size, and the percentage of multigrade classes. Panel C includes teacher characteristics, such as the average years of experience and the share of teachers without a teaching diploma. Panel D presents student socioeconomic background measures, including average years of parental education and a proxy for household income based on eligibility for the Preferential School Subsidy (SEP). Panel E reports school-level test scores in standardized national assessments in mathematics and language. These summary statistics highlight key differences in resources, student composition, and outcomes across school types.

*** denotes significance at the 99% level, ** denotes significance at the 95% level, and * denotes significance at the 90% level.

Table 2: Effect of For-profit Management on School Inputs

	(1)	(2)	(3)
<i>A. Pupil-teacher ratio</i>			
for-profit	-0.076*** (0.026)	-0.061*** (0.021)	-0.055*** (0.018)
observations	16,802	16,802	11,294
R ²	0.004	0.293	0.348
<i>B. Instruction hours per student</i>			
for-profit	0.111*** (0.032)	0.076*** (0.020)	0.055*** (0.019)
observations	16,802	16,802	11,294
R ²	0.007	0.365	0.432
<i>C. Class size</i>			
for-profit	-0.202*** (0.042)	-0.146*** (0.026)	-0.162*** (0.020)
observations	17,001	17,001	11,342
R ²	0.014	0.430	0.534
school controls	no	no	yes
municipality \times year FE	no	yes	yes

Notes: All results come from estimation of panel data regressions using the log of the variable in the column heading as the dependent variable. The dependent variable is a **school input** (pupil-teacher ratio, instruction hours per student, or class size), controls include the share of multigrade classes, an indicator for participation in the targeted voucher program, the percentage of disadvantaged students, and parental education (mother's and father's years of schooling).

Standard errors clustered at the school municipality level.

*** denotes significance at the 99% level, ** denotes significance at the 95% level, and * denotes significance at the 90% level.

Table 3: Effect of For-profit Management on School Test Scores

	(1)	(2)	(3)
<i>A. Verbal</i>			
for-profit	-0.386*** (0.036)	-0.358*** (0.038)	-0.040 (0.030)
observations	11,183	11,183	10,178
R ²	0.026	0.209	0.469
<i>B. Math</i>			
for-profit	-0.355*** (0.038)	-0.336*** (0.038)	0.007 (0.028)
observations	11,165	11,165	10,168
R ²	0.023	0.235	0.521
school controls	no	no	yes
municipality \times year FE	no	yes	yes

Notes: All results come from estimation of panel data regressions using the log of the variable in the column heading as the dependent variable. The dependent variable is a **test score** (verbal or math), the specification includes controls such as the share of multigrade classes, an indicator for participation in the targeted voucher program, the percentage of disadvantaged students, and parental education (mother's and father's years of schooling), average teacher experience, and the share of out-of-field teachers.

Standard errors clustered at the school municipality level.

*** denotes significance at the 99% level, ** denotes significance at the 95% level, and * denotes significance at the 90% level.