**Chapter 9: The Role of PISA in Regional and Private/Public Debates in Italy**

Daniele Checchi and Stefano Verzillo

**Abstract**

This chapter discusses the role of PISA in regional and private/public debates in Italy. Drawing from results of the last three waves of test scores (2009, 2012, 2015), we focus on the existent heterogeneity within the private sector in which different types of schools respond to different parent and children needs. Specifically, Italian private schools may be classified according to the motivation of parental choices, distinguishing between *confessional* and *non-confessional* schools according to available information on schools' adherence to a particular religious philosophy (from both parent and school administrator questionnaires). We examine existing associations between school types and test scores and show that while private schools on average perform lower than public schools, *confessional* private schools are shown to be undistinguishable from corresponding public ones. We also test the causal effects of private education using an instrumental variable estimation, confirming the existence of heterogeneity in student outcomes (math, reading, and science) within the private sector in Italy.

**Introduction**

The debate over the pros and cons of private-sector schooling has a long history in the economic literature. Proponents question the lack of freedom in school choice over the contents of the education and/or learning environment. They also affirm the benefit of competitive pressure exerted by the private onto the public sector. Opponents counter with the equality of opportunity argument, which is hampered by student segregation according to socioeconomic status (SES) and/or religious/ideological beliefs. This debate involves economists, sociologists, political scientists, and educational experts, who do not necessarily share a common perspective of analysis.

However, an evidence-based approach to the problem would indicate the impact of private schooling as a crucial dimension to be assessed. In fact, if attending private schools improves student achievement (e.g., due to a more efficient use of resources), then there could be good reasons to promote the expansion of the private sector, at least from an efficiency point of view. If private schooling otherwise does not improve student performance (or is even detrimental, due to social exclusiveness associated with lower motivation), then equity could be reason enough to favor public schooling. Unfortunately the global picture is not clear-cut. In Figure 1 we plot the ratio between average student test scores in private schools over the corresponding value for public schools in two domains (literacy and numeracy). The private outperforms the public sector in at least half of the countries, with some differences between literacy and numeracy. However the gap between sectors can be as large as ±10%. This raw indicator mixes many elements which should be disentangled in order to assess the real effectiveness of the private sector, including heterogeneity in the student body, autonomy in content choice, existence of national testing, and teacher incentives.

Nevertheless the data suggest that there is no apparent common pattern in the positioning of the private sector in the school sector of different countries. This motivates the present study, because Italy is one of the countries in which the public sector seems to dominate the private sector, at least at the secondary level in the PISA survey. We aim to assess the robustness of such perception, and whether it is intrinsically attributable to the quality of the education provided (i.e., whether private schooling causes better or worse performance in student testing). Anticipating the conclusions, we find that only some subsectors in the private sector (namely, the *non-confessional* private sector, which can either be for-profit or non-profit) are associated with a lower performance vis-à-vis the public sector. On the contrary, confessional private schools are statistically undistinguishable from public ones. This focuses discussion on the role of religious motivation in educational achievement, which is a resource that a private initiative can rely upon but from which a state university by law is forced to abstain.

<FIGURE 1 HERE>

**Heterogeneity in the Private Sector**

Student performance within schools is the joint outcome of student inputs (reflecting selection on parental background) and quality of instruction provided by teachers, who in turn may be self-selected. For approximately two-thirds of countries tested in the PISA program, when we control for observables students who attend private schools outperform students who attend public schools. This difference is driven mainly by the ability of private schools to attract students with better SES who usually outperform average public school students in standardized tests (Bertola & Checchi, 2013). Recent international evidence indicates that SES, rather than achievement or

attitude, is the strongest predictor of attending a private school. Instead of a traditional "cream-skimming" effect by schools, it seems that the sorting effect matters more, particularly for students from better SES sorted into private schools (Rutkowski, Rutkowski, & Plucker, 2012).

On average, three-quarters of the mean difference between private and public schools in PISA results is attributed to SES. In addition, private schools usually charge tuition fees to parents, reinforcing the sorting mechanism based on SES. In addition, the existence of peer effects may exacerbate inequality of opportunities in human capital accumulation (Epple & Romano, 1998). From a social welfare perspective, the debate around this evidence calls for examining effectiveness and equity in the regulation of the private sector in schooling (Boeskens, 2016).

On the one hand, high-income parents are willing to invest more in the education of their children, providing them with better teachers, better buildings, and a self-selected social environment, and for this reason they are available to pay a premium price despite the free provision of education in public schools; given their initial wealth/income, the marginal cost of their investment is lower than the corresponding cost for low-income parents, a fraction of which is often liquidity constrained. The mere existence of a private sector in schooling offers high-income families the opportunity to exercise this choice, thus raising in the aggregate the total investment in education. However, on the other hand private schools create unwanted socioeconomic consequences because they create inequalities in educational opportunities due to the segregation of students according to SES (Roemer & Unveren, 2017).

Obviously, parents make their choices based on aspirations over their children abilities, perceptions on quality of teaching, and beliefs regarding the (supposedly beneficial) effect of

social exclusiveness. Nevertheless, reality can yield contradictory outcomes, depending on what is driving the underlying self-selection process for students and teachers. If for example profit-oriented private schools pay lower wages to teachers, the best teachers will be diverted towards the public sector paying higher wages. Similarly, if obtaining a degree is easier in private schools due to lower selectivity, low-motivated children from richer families may outnumber children from different backgrounds attending private-sector schools. For these reasons, any existing empirical evidence on private schooling requires addressing this selection and sorting issues on both observable and unobservable students' and teachers' characteristics.

For example, recent evidence drawn from PISA surveys shows that when public schools are compared with subsidized private schools with a comparable student body, their performances are not statistically different while they outperform independent private schools (Sakellariou, 2017). However, in the OECD area there is considerable heterogeneity in the private schooling sector among different countries, so that we cannot speak of a standard self-selection model into private that is applicable to all countries. Indirect evidence of this comes from the fact that private education is associated with better performance in higher education enrolment and in labor market outcomes in the United States (e.g., Figlio & Stone, 2001), the United Kingdom (Green, Machin, Murphy, & Zhu, 2011), as well as in Spain (Aparicio, Crespo-Cebada, Pedraja-Chaparro, & Santín, 2017) where there is some evidence of higher performances for private government-dependent schools. On the contrary, private schooling is associated with poorer outcomes in Italy (Bertola & Checchi, 2004; Bertola, Checchi, & Oppedisano, 2007) and Ireland (Pfeffermann & Landsman, 2011). In a comparative cross-country perspective, the size of the private schooling sector positively correlates with country performance, possibly due to the competitive pressure exerted on the public sector (Woessman, 2016).

In this debate, the private sector within each country is often considered as an undifferentiated set of schools, homogeneous in terms of student intake, available resources (e.g., average tuition fees), number of teachers, and location. However, different private schools may be attractive for different—and sometimes contrasting—reasons, such as the exclusive atmosphere and better amenities (elite schools), provision of extended hours and individual tutoring and counselling (remedial schools), and/or religious education (confessional schools). This suggests a significant degree of heterogeneity among private schools at least in their institutional characteristics and in their declared mission.

A recent strand of the educational literature focused on the effectiveness of confessional (Catholic) schools finds contrasting results. Some works adopt an Instrumental Variable approach based on the local availability of resources and show a positive causal effect on high school graduation and college attendance in the U.S. but no significant effects on test scores (Altonji, Elder, & Taber, 2005; Gihleb & Giuntella, 2016). In contrast, Elder and Jepsen (2014) find evidence of a negative effect on math scores in Catholic primary schools. In addition, Gibbons and Silva (2011) show that the advantage of pupils in confessional primary schools (faith schools in general) in the U.K. is fully explained by sorting according to family characteristics. From a wider perspective, West and Woessmann (2010) use the historical pattern of Catholic presence as a natural experiment to estimate the causal effect of contemporary private competition on student achievement in cross-country student-level analyses. Their results show that larger shares of privately operated schools lead to better student achievement in test scores.

In this study, we focus on the Italian school system where the effectiveness of private education

is high stakes, especially since recent governments have introduced partial tax deductibility of private school tuition, thus expanding public subsidization of private schools. Italy is also an interesting case study for analyzing the impact of confessional schools due to the dominant role of the Catholic Church in the country's history. We examine the heterogeneity within the private sector by categorizing schools into two groups, confessional and non-confessional, according to their different (inferred) mission, and estimating differences in the causal impacts of attending schools in one group or the other vis-à-vis public schools. We take standardized test scores from OECD-PISA surveys as measure of outcome, and we focus on the differential effect between confessional and non-confessional school attendance on educational achievement.

**The Data**

We focus on standardized test scores in mathematics, reading, and science of 15-year-old pupils in Italy.[1] PISA defines a public school as a school that is publicly funded and managed directly or indirectly by a public education authority, government agency, or governing board appointed by government or elected; conversely, a private school can be described as an educational institution managed directly or indirectly by a non-government organization (e.g., a church, trade union, business, or any other profit or not-for profit private organization), despite partial or full subsidiszation from public revenues.[2] In addition, the PISA survey allows for the distinction between two types of private schools in Italy: "private-dependent" schools with a government contribution equal or greater to 50% of the school total budget and "private-independent" schools

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[1] As is common in the literature using PISA, we assume that the sample selection probabilities are not related to the response variable and the covariates, and hence that there are no sampling effects (Pfeffermann & Landsman, 2011).
[2] This classification of private school is inappropriate in the case of schools located in the autonomous regions of Trento and Bolzano (in north-east Italy). In these regions, all schools are classified as private government-dependent schools in the PISA survey, due to the fact that they are fully financed by local governments, which have fiscal autonomy from the central government. Therefore we recoded them as public government-dependent schools, as in the other regions.

with government contributions representing less than 50% of total budget. The 2016

representative sample from Italy consists of 302 public schools and 18 private schools.

In addition, we used additional information contained in PISA questionnaires to classify private

(both government-dependent and independent) schools as confessional or non-confessional

following two alternative strategies. The first one considers an item in the parents' questionnaire

that allow the classification of schools according to the percentage of parents (we chose at least

25%) who declare that their enrolment choice was mainly driven by the fact that the school

adheres to a particular religious philosophy (parents who answer "Important" or "Very

Important" on the PA006Q04TA item). The second strategy follows the school questionnaire

allowing a potential identification of confessional schools according to the answers provided by

the heads of the school about the type of organization effectively running their respective schools

(see the SC014Q01NA item). Among the available answers to this item, the school's head could

answer "A church or other religious organisations." We chose this entry to distinguish between

confessional and non-confessional schools among private ones.[3]

**Econometric Strategy**

*Descriptive Evidence from a Multilevel Approach*

First, we estimate a multilevel model for PISA test scores on student and school characteristics

over the last three waves (2009, 2012, 2015). The multilevel model fits well when the data are

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[3] There is a large overlap between the two criteria, but the former has a certain degree of arbitrariness due to the threshold above which we consider a school as a confessional one. For this reason we preferred the second alternative.

characterized by a hierarchical structure (students within schools), the dependent variable being measured at the lowest level (student) and control variables introduced at the existing levels (students and schools). Multilevel models are particularly useful with grouped data because observations in each school are more similar among them than the observation from different schools, thus rejecting the usual independence assumption of standard regression models.

From a theoretical viewpoint, the multilevel model might be considered as a hierarchical system of regression equations (Hox, 1995). Consider the following equation of an individual school outcome $Y_{ij}$ (e.g. test score) for the *i-th* student (*i*=1,…, N) within the *j-th* school (*j*=1,… , J):

$$Y_{ij} = \beta_{0j} + \beta_{1j} X_{ij} + e_{ij} \qquad (1.1)$$

where $\beta_{0j}$ is the intercept, $\beta_{1j}$ is the regression slope and $e_{ij}$ is the residual error term. The multilevel model assumes that each school might be characterized by a specific intercept ($\beta_{0j}$) and also a different slope ($\beta_{1j}$) allowed varying across schools.

Then the multilevel model predicts the variation of the regression coefficient $\beta_j$ by introducing explanatory variables at the school level estimating the following equations:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} Z_j + u_{0j} \qquad (1.2)$$

and

$$\beta_{1j} = \gamma_{10} + \gamma_{11} Z_j + u_{1j} \qquad (1.3)$$

Then, the multilevel model of students into schools might be written as one single equation substituting (1.2) and (1.3) into (1.1) as follows:

where the first four terms state the *deterministic* part of the model with all the fixed coefficients ($\gamma_{00}$, $\gamma_{01}$, $\gamma_{10}$, $\gamma_{11}$) while the last three terms represent the *stochastic* part of the model with the random coefficients ($u_{1j}$, $u_{0j}$, $e_{ij}$). Results of a multilevel model are reported in Table 1, which identify confessional and non-confessional schools according to head of school indications.

<TABLE 1 HERE>

Results show robust evidence of the existence of heterogeneity in test scores between confessional and non-confessional schools in math and reading in 2009 with an average score tof 29 and 21 points lower, respectively, for students in non-confessional schools when compared to students in public schools. On the contrary, students belonging to private confessional schools show average test scores that are not statistically different from students in public schools. However, this evidence does not seem to be persistent over time for 2012 and 2015 PISA waves. Moreover, if results in 2012 show the same pattern of heterogeneity even if they are not statistically significant, the dramatic reduction of the sample size of the 2015 wave[4] and the unavailability of a couple of control variables makes the estimation for the last wave particularly weak. In addition, results of these models show some evidence of lower test scores for students in private non-confessional schools if compared with average test scores of public school students while no differences are estimated between students in confessional private and public schools.

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[4] In previous versions (2009 and 2012) the sample was expanded to allow for statistical significance of regional disaggregation, which has been abandoned in 2015; however, the sample size is comparable with other countries.

$$Y_{ij} = \gamma_{00} + \gamma_{01} Z_j + \gamma_{10} X_{ij} + \gamma_{11} Z_j X_{ij} + u_{1j} X_{ij} + u_{0j} + e_{ij} \qquad (1.4)$$

However, this evidence is simply descriptive of the underlying distributions, and should not be interpreted as a causal effect of attending different schools within the private sector in Italy. In fact, the multilevel models results might be biased by self-selection and sorting of students into schools. In order to overcome the endogeneity in the private school attendance (either confessional or non-confessional), an instrumental variable (IV) approach can be adopted.

*An Instrumental Variable Approach*

Most of the existing literature on private schooling aims to gauge the effects of private schooling on student outcomes (Altonji et al., 2005; Coleman, Hoffer, & Kilgore, 1982). However the outcome of students attending private schools may be the mere reflection of unobservable characteristics of students, without any substantial difference in the quality of teaching. Moreover, if one could identify an exogenous source of variation in private school attendance (either favoring or contrasting it), then the actual effect of this attendance on test scores could be identified. The estimated coefficient reflects the causal impact on test score of the group of students shifted by the instrument.

Following this line of research, the next step of this study is to implement an IV estimation in order to control for the potential endogeneity of the private school attendance. The IV strategy crucially depends on the existence of a proper instrument that allows the identification of the choice equation—a variable that is uncorrelated with the outcome (test score) but is correlated

with the selection into private. Following Vandenberghe and Robin (2004), we take advantage of geographical features as "natural" instruments for endogenous characteristics of the school system (for topographic features, see also Hoxby, 2000). They argue that variation in the supply of private schools between big cities and other areas essentially reflects historical and traditional factors that can be assimilated to supply-side aberrations. On the other hand, someone may object that the relative prevalence of private/public schools in small/large cities somehow reflects demand-side factors (e.g., biased residential choices that may have an impact on the supply of private education or the reverse), in which case the endogeneity problem would not be entirely solved. However, residential choices in Italy seem more dictated by job opportunities and/or family ties;[5] in addition the housing market is rather thin due to a large percentage of home ownership (73.1% in 2014[6] vs. an EU average of 66.7%). As a consequence, such evidence downplays this second line of argument.

We have instrumented the heterogeneity of private school enrolment (private confessional and private non-confessional vs. public schools) using school location. We generated a set of dummy variables corresponding to students attending schools located in a village (<3,000 inhabitants), in a town (3,000-15,000 inhabitants), in a city (15,000-100,000 inhabitants) or in a large city (>100,000 inhabitants).

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[5] To the best of our knowledge, no studies provide evidence of residential choices associated to the quality of local schools in Italy (the same argument that parents typically apply to a school located near their home was recently used by Angrist, Battistin, and Vuri (in press)).
[6] According to the distribution of population by tenure status, type of household, and income group of the EU-SILC survey (computed from microdata).

First stage results (see Appendix, Tables A.1 and A.2) show that there is a positive and significant association between attending both a confessional and a non-confessional private school and school location: living in a larger city positively increases the probability of attending a private school for both enrolment types. The F-statistics of the first stages are larger than 10. Moving to the examination of the relationship between private schools and test scores shown in Table 2, we observe that OLS estimates (odd-numbered columns) suggest that private schools are associated to a negative premium (which is statistically significant in five out of six cases in the 2012 sample, when the sample size is large enough to allow precision of measurement; on the contrary, it is still negative but insignificant in almost all cases of the 2015 sample), even taking into account gender, age, citizenship, parental background, and grade attended.[7] Once we instrument school type with city size (even-numbered columns), we observe that confessional schools becomes undistinguishable from public ones in terms of student performance using the 2012 sample, and become even outstanding in science and literacy in the 2015 sample.[8] Conversely, non-confessional schools remain worse than public ones in the large 2012 sample, while becoming undistinguishable in the 2015 sample.

The remaining coefficients behave according to expectations: better parental background (captured by the index of SES and proxied by the number of books at home) is positively associated with higher scores, but the coefficients slightly change when moving from OLS to IV estimates, indicating that the same variables also drive sorting into different types of private

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[7] Italian students experience high rates of retention; while the majority of the students interviewed by PISA 2015 is in modal grade (grade 10 corresponding to 15-year-old students includes the 82% of the 2012 sample and the 79% of the 2015 sample), retained students constitute 15% of the population. These percentages rise above 20% in the case of private schools, because a significant number of failed students move from public to private schools.
[8] However the IV coefficients are too high in magnitude to consider their external validity, possibly due to limited sample size.

schools. Student performance in also increasing in larger schools (despite the higher student–teacher ratio), and also positively correlated with the proportions of qualified teachers. In addition to the public/private divide, sorting also takes place according to tracking, as indicated by the negative coefficient associated with vocational schools.

<TABLE 2 HERE>

**Discussion and Conclusion**

Summing up, we have found that private schooling in Italy is characterized by heterogeneity that is not easy to identify. At a descriptive level, the differences in mean performance seem accounted by differences in resource endowment (see multilevel analysis reported in Table 1). When we try to model sorting into private schools, the residence location seems to account for a fraction of variance in private school attendance. However this is also related to parental resources, which cannot be disentangled in their impact on student performance. As a consequence we find that private schooling could be associated to positive performance vis-à-vis public ones. In an attempt to characterize this type of attendance, we have distinguished between different types of private schools, according to their confessional inspiration. Unfortunately, degrees of freedom limit our analysis considerably (in 2015 we are analyzing 332 schools, of which only 15 only are private), and therefore our results can only be considered as suggestive. When we resort to larger samples in previous surveys (2009 and 2012), we find that private confessional schools have performances that are statistically undistinguishable from public ones, while private non-confessional schools follow at a distance.

Two potential explanations can be advanced: first, confessional schools may rely on additional resources, religious inspiration, and motivation, which is shared by parents, teachers, and students. The aim to achieve, the control of disruptive behavior, and the mutual support among students create patterns that favor mutual learning and raise global performance. Second, confessional schools are more likely to employ teachers who are members of a religious order. As such they can provide extra time pro bono in an attempt to support weaker students. These two advantages are not shared by private non-confessional schools, and these may account for the differential performance of this second group of schools (which are typically for profit).

There are obviously other differences between the private and public sectors of education in Italy, which may interfere in the comparison and that we are unable to control for. First of all, private schools pay lower salaries than public ones, up to the point that many aspiring teachers start their career in the private sector, and move to the public one later in life to exploit the seniority cumulated in past experience. Second, even without explicit admission policies, private schools induce sorting of students based on observable features of students. Administrative data indicate that the number of disabled and/or students born abroad reach negligible percentages in private schools. Since these groups of students call for additional teacher resources, in their absence they reduce the attention devoted to ordinary students. These two factors, negative selection of teachers and positive selection of students, work in opposite directions, and therefore the aggregate result is uncertain.

The impossibility of assessing the performance of private against public schools raises the issue of whether public policies should sustain this initiative, granting financial support. On one hand they do represent a reduction in cost to local municipalities, because of the non-use of public

facilities; as such there are good reasons to less-than-fully subsidize these choices. On the other hand, self-sorting of students according to either SES or ideological and religious beliefs hinders the socialization goal of schools in a country, and as such should be hampered. The inability of Italian politicians to take a decisive step in one or another direction probably may explain why the private sector has remained so far negligible, despite the high visibility it assumes in the political debate.

**References**

Altonji, J. G., Elder, T., & Taber, C. (2005). Selection on observed and unobserved variables: Assessing the effectiveness of Catholic schools. *Journal of Political Economy*, *113*(1), 151-184. doi:10.1086/426036

Angrist, J., Battistin, E., & Vuri, D. (in press). In a small moment: Class size and moral hazard in the mezzogiorno. *American Economic Journal: Applied Economics*. Retrieved from https://www.aeaweb.org/journals/app/forthcoming

Aparicio, J., Crespo-Cebada, E., Pedraja-Chaparro, F., & Santín, D. (2017). Comparing school ownership performance using a pseudo-panel database: A Malmquist-type index approach. *European Journal of Operational Research*, *256*(2), 533-542. doi:10.1016/j.ejor.2016.06.030

Bertola, G., & Checchi, D. (2004). Sorting and private education in Italy. In D. Checchi & C. Lucifora (Eds.), Education, training and labour market outcomes (pp. 69-108). New York, NY: Palgrave Macmillan.

Bertola, G., & Checchi, D. (2013). Who Chooses Which Private Education? Theory and International Evidence, *Labour*, 27(3): 249-271

Bertola, G., Checchi, D., & Oppedisano, V. (2007). Private school quality in Italy. *Giornale degli Economisti e Annali di Economia*, *66*(3), 375-400.

Boeskens, L. (2016). *Regulating publicly funded private schools: A literature review on equity and effectiveness* (OECD Education working papers no. 147). Paris, France: OECD Publishing. doi:10.1787/5jln6jcg80r4-en

Coleman, J. S., Hoffer, T., & Kilgore, S. (1982). *High school achievement: Public, Catholic, and private schools compared*. New York: Basic Books.

Elder, T., & Jepsen, C. (2014). Are Catholic primary schools more effective than public primary schools? *Journal of Urban Economics*, *80*, 28-38. doi:10.1016/j.jue.2013.10.001

Epple, D., & Romano, R. (1998). Competition between private and public schools, vouchers, and peer-group effects. *American Economic Review*, *88*(1), 33-62.

Figlio, D., & Stone, J. (2001). Can public policy affect private school cream skimming? *Journal of Urban Economics*, *49*(2), 240-266. doi:10.1006/juec.2000.2189

Gihleb, R. & Giuntella, O. (2016). Nuns and the Effects of Catholic Schools. Evidence From Vatican II. University of Pittsburgh Working paper series n.16/003

Gibbons, S., & Silva, O. (2011). Faith primary schools: Better schools or better pupils? *Journal of Labor Economics*, *29*(3), 589-635. doi:10.1086/659344

Green, F., Machin, S., Murphy, R., & Zhu, Y. (2011). The changing economic advantage from private schools. *Economica*, *79*(316), 658-679. doi:10.1111/j.1468-0335.2011.00908.x

Hox, J. J. (1995). *Applied multilevel analysis*. Amsterdam, The Netherlands: TT-Publikaties. Retrieved from http://joophox.net/publist/amaboek.pdf

Hoxby, C. (2000). Does Competition among Public Schools Benefit Students and Taxpayers?, *American Economic Review*, vol. 90(5), pages 1209-1238, December.

Pfeffermann, D., & Landsman, V. (2011). Are private schools better than public schools? Appraisal for Ireland by methods for observational studies. *The Annals of Applied Statistics*, *5*(3), 1726-1751. doi:10.1214/11-AOAS456

Roemer, J., & Ünveren, B. (2017). Dynamic equality of opportunity. *Economica*, *84*(334), 322-342. doi:10.1111/ecca.12197

Rutkowski, L., Rutkowski, D., & Plucker, J. (2012). International determinants of private school attendance. *Educational Research and Evaluation*, *18*(4), 375-391. doi:10.1080/13803611.2012.686239

Sakellariou, C. (2017). Private or public school advantage? Evidence from 40 countries using PISA 2012-Mathematics. *Applied Economics*, *49*(29), 2875-2892. doi:10.1080/00036846.2016.1248361

Vandenberghe, V., & Robin, S. (2004). Evaluating the effectiveness of private education across countries: A comparison of methods. *Labor Economics*, *11*(4), 487-506. doi:10.1016/j.labeco.2004.02.007

West, M. R., & Woessmann, L. (2010). "Every Catholic child in a Catholic school": Historical resistance to state schooling, contemporary private competition and student achievement across countries. *Economic Journal, 120*(546), F229-F255. doi:10.1111/j.1468-0297.2010.02375.x

Woessman, L. (2016). The importance of school systems: Evidence from international differences in student achievement. *Journal of Economic Perspectives*, *30*(3), 3-32. doi:10.1257/jep.30.3.3