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Aspects of Socio-economic Stratification

This chapter examines the differences in the socio-economic backgrounds of students who attend publicly and privately managed schools, and how these differences vary across countries. The chapter also analyses how various system characteristics are related to socio-economic stratification.

HOW SOCIO-ECONOMIC STRATIFICATION VARIES ACROSS COUNTRIES

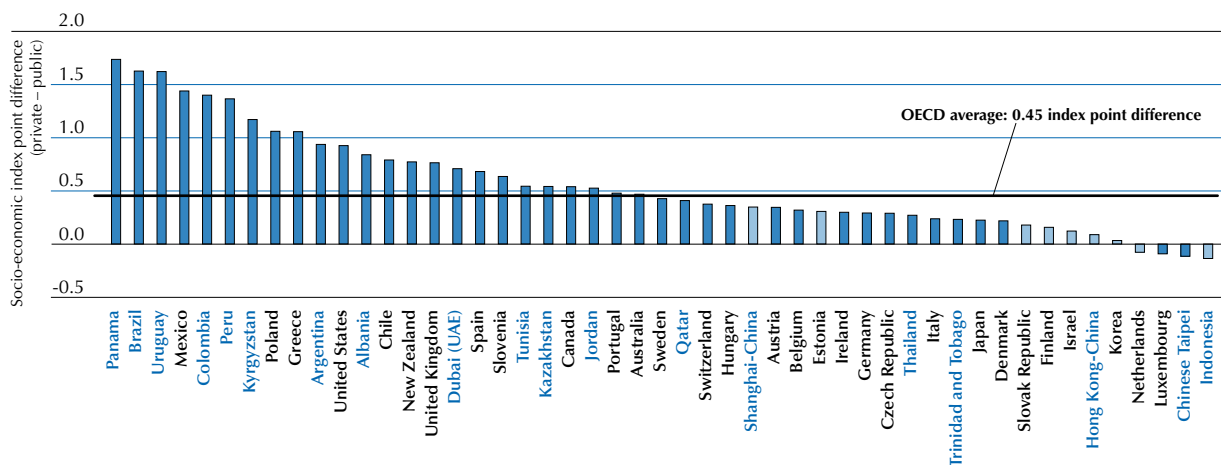
Students who attend privately managed schools tend to be those from more socio-economically advantaged backgrounds (Table B2.1). In most PISA-participating countries and economies, the average socio-economic background of students who attend privately managed schools is more advantaged than that of those who attend public schools. The exceptions are Luxembourg, the Netherlands, Korea, Israel, Finland, the Slovak Republic, Estonia and the partner countries and economies Indonesia, Chinese Taipei, Hong Kong-China and Shanghai-China, where the average socio-economic background of students who attend privately managed schools is not more advantageous than that of those students who attend publicly managed schools.

Figure 2.1 shows the socio-economic stratification between students attending publicly and privately managed schools by country and how this stratification varies across countries.¹ In Mexico, Poland, Greece, the United States, Chile, New Zealand, the United Kingdom, Spain, Slovenia, Canada and the partner countries and economies Panama, Brazil, Uruguay, Colombia, Peru, Kyrgyzstan, Argentina, Albania, Dubai (UAE), Tunisia, Kazakhstan and Jordan, the difference in socio-economic background between these two groups of students is 0.5 index points or more, favouring privately managed schools. This is equivalent to over half a standard deviation of the index. In contrast, in Luxembourg and the partner economy Chinese Taipei, the socio-economic background of students who attend publicly managed schools tends to be more advantaged than that of students who attend privately managed schools. In the Netherlands, Korea, Israel, Finland, the Slovak Republic, Estonia, the partner country Indonesia and the partner economies Hong Kong-China and Shanghai-China, there is no difference in the socio-economic backgrounds of students who attend publicly and privately managed schools.

■ Figure 2.1 ■

How socio-economic stratification varies across countries

Difference in socio-economic background between students in privately and publicly managed schools, as measured by the PISA index of economic, social and cultural status (ESCS)



Note: Index-point differences that are statistically significant are marked in a darker tone.

Countries are ranked in descending order of the index point of difference.

Source: OECD, PISA 2009 Database; Table B2.1.

As the student samples of PISA are based on age, the 15-year-old students who participated in PISA 2009 attended either lower secondary or upper secondary levels. In most countries, the stratification within each of these levels is similar to the overall stratification at the country level (Table B2.2). However, in Switzerland and the Czech Republic, the overall stratification favours privately managed schools, that is, in general in these countries, more advantaged students attend privately managed schools, but no socio-economic stratification is observed at the upper secondary level. In contrast, in the partner country Trinidad and Tobago, overall stratification favours privately managed schools, but no such stratification is observed at the lower secondary level. In Thailand, overall stratification favours privately managed schools, but no stratification is observed at the lower or upper secondary level. In Indonesia, there is no overall stratification, but there is at the upper secondary level, and it favours publicly managed schools.



Another way of looking at socio-economic stratification is to examine the percentage of students who attend privately managed schools by quarters (i.e. quartiles) of the *PISA index of economic, social and cultural status*. For example, in Chile, 80% of the country's most-advantaged quarter of students attend privately managed schools, while 38% of the country's least-advantaged quarter of students attend such schools (Table B2.1), a difference of 42 percentage points. There is a 20 percentage points, or greater, difference between these two groups of students in Chile, Australia, Spain, Mexico, Ireland, the United States and the partner countries and economies Panama, Uruguay, Argentina, Peru, Colombia, Brazil, Dubai (UAE), and Qatar. In contrast, in Chinese Taipei, 31% of the country's most-advantaged quarter of students attend privately managed schools, while 41% of the country's least-advantaged quarter of students attend such schools.

SOCIO-ECONOMIC STRATIFICATION AND OVERALL PERFORMANCE

Is it possible for countries to minimise stratification while achieving high overall performance? Do countries have to choose between the two? Figure 2.2 shows that countries with less stratification tend to have higher scores in reading, while countries with more stratification tend to have lower scores.²

■ Figure 2.2 ■

Attaining both small stratification and high performance is possible

Stratification: Difference in socio-economic background between students in privately and publicly managed schools, as measured by the PISA index of economic, social and cultural status (ESCS)



Source: OECD, *PISA 2009 Database*; Tables B2.1 and B2.3.



This cross-sectional analysis does not prove any causal relationship, and it is not possible to conclude that countries tend to have better overall performance if they provide all students, regardless of their socio-economic background, with the opportunity to attend privately managed schools, which, in general, have more autonomy, better educational resources and better school climates to maximise students' potential. There could be other aspects involved. Even though preliminary evidence from PISA 2009 does not provide any clear cross-country patterns in the relationships between public and private involvement in school management and funding and countries' average performance levels (see Annex A2), what these results do show is that minimising stratification and attaining high overall performance are not mutually exclusive.

SOME SYSTEM CHARACTERISTICS AND SOCIO-ECONOMIC STRATIFICATION

The difference in socio-economic background between students who attend publicly managed schools and those who attend privately managed schools varies greatly across countries. This section explores how public and private involvement in schools is related to stratification. Do countries with more privately managed schools have less socio-economic stratification? Do countries with higher levels of public funding to privately managed schools have less stratification?

If socio-economically disadvantaged families have more difficulties in sending their children to privately managed schools because of tuition fees, more public financial involvement in privately managed schools would ease that burden and more disadvantaged students would be able to attend privately managed schools. The extent to which public funding covers schooling costs matters. In some countries, such as the Netherlands, the government fully covers the cost of tuition and schools can only ask for voluntary contributions from parents. In other countries, public money does not fully cover tuition costs and schools are allowed to charge top-up fees, which not only make some choices less affordable for disadvantaged parents, but can also result in significant differences in school resources and, consequently, differences in the quality of education offered (Hirsch, 2002). For this report, the average percentage of private schools' funding that comes from the government is used as a proxy for the level of public financial commitment to private schooling in a given country.³

This chapter also explores how stratification is related to country-level background characteristics, such as variations in students' socio-economic backgrounds and countries' average socio-economic level, and some characteristics of the countries' school systems, such as the prevalence of privately managed schools or of competition among schools.⁴ Countries with wider socio-economic variations among students might be more likely to have greater stratification between publicly and privately managed schools. Countries with more students from disadvantaged backgrounds might be more likely to have greater stratification as the financial burden that parents must bear to send their children to privately managed schools would be even heavier in these countries. Countries with more school competition might be more likely to have greater stratification as well.

Results show that stratification does not seem to be related to the prevalence of privately managed schools or to the prevalence of school competition (see correlation results in Table B2.4 and multilevel regression results in Model 2 in Table B2.5). One could argue that the relationship would not be linear, but a U shape. This means that countries with only a small proportion of students in privately managed schools or countries where most students attend privately managed schools tend to have greater stratification than countries with similar numbers of students in publicly and privately managed schools. The most advantaged students might attend privately managed schools where only a very few privately managed schools are available, while the most disadvantaged students might attend publicly managed schools when privately managed schools are available for almost everyone. However, there is no even non-linear relationship between the prevalence of privately managed schools and the magnitude of socio-economic stratification across OECD countries.⁵

In contrast, the level of public funding to privately managed schools is related to the magnitude of socio-economic stratification. Figure 2.3 shows that in those countries where private schools receive higher proportions of public funding, there is less stratification between public and private schools. Across OECD countries, 45% of the variation in stratification can be accounted for by the level of public funding to privately managed schools; across all participating countries,⁶ 35% of the variation in stratification can be accounted for in this way (Table B2.4).⁷ Even after accounting for the prevalence of private schools (Model 7 in Table B2.5) and other country-level characteristics, such as variations in the socio-economic backgrounds of students, the average socio-economic background of countries and the level of school competition (Model 8 in Table B2.5), the magnitude of stratification between publicly and privately managed schools

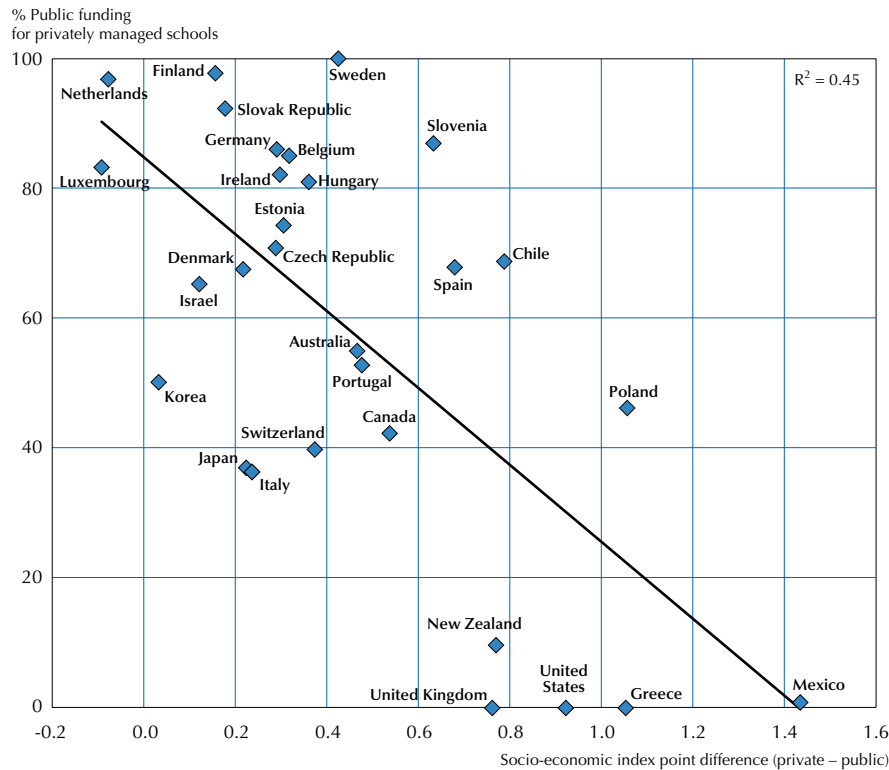


is still related to the level of public funding for privately managed schools. The coefficient of -0.06 for public funding for privately managed schools in Model 8 means that a 10 percentage-point increase in public funding for privately managed schools is associated with a 0.06 index-point reduction in stratification.

■ Figure 2.3 ■

Relationship between stratification and public funding for privately managed schools

Stratification: Difference in socio-economic background between students in privately and publicly managed schools, as measured by the PISA index of economic, social and cultural status (ESCS)



Source: OECD, *PISA 2009 Database*; Tables B1.4 and B2.1.

Among OECD countries, those with greater variations in the socio-economic backgrounds of students and that are more disadvantaged overall tend to have greater stratification (Table B2.4). But, after accounting for other country-level characteristics, these aspects do not seem to be significantly related to stratification (Model 8 in Table B2.5). The level of school competition is also not related to stratification among OECD countries (Table B2.4).

In sum, the level of public funding for privately managed schools is related to the magnitude of stratification, even after accounting for various country-level characteristics. These results should be interpreted cautiously. Despite the association, this result does not suggest that providing more public funding for privately managed schools will automatically result in reducing stratification between publicly and privately managed schools. First, cross-country data do not indicate any causal relationships. Second, about 55% of the variation in socio-economic stratification is not accounted for by the level of public funding for privately managed schools. For example, as shown in Figure 2.3, Finland, Japan and Italy have similar levels of stratification; but while Italy and Japan spend similarly low levels of public funding on private education (about 35%), in Finland, practically all funding for private schools comes from public sources. Finally, the design of funding schemes can influence the degree of stratification. This is examined in detail in Chapter 3.

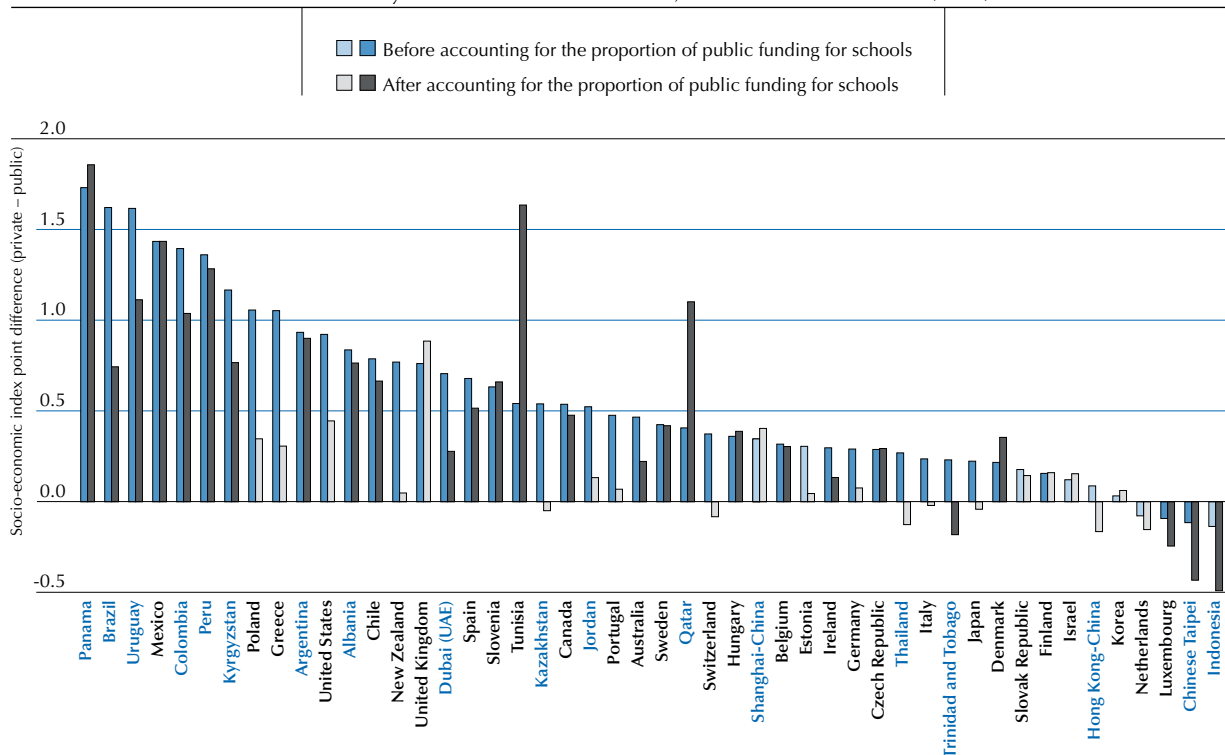
SOCIO-ECONOMIC STRATIFICATION BEFORE AND AFTER ACCOUNTING FOR PUBLIC FUNDING

In some countries, socio-economic stratification is mainly explained by the fact that parents must pay more to send their children to privately managed schools; but in other countries, school fees do not explain stratification completely.

■ Figure 2.4 ■

How socio-economic stratification varies across countries, before and after accounting for the proportion of public funding for schools

Stratification: Difference in socio-economic background between students in privately and publicly managed schools, as measured by the PISA index of economic, social and cultural status (ESCS)



Note: Index-point differences that are statistically significant are marked in a darker tone.

Countries are ranked in ascending order of the index-point difference before accounting for the proportion of public funding for schools.

Source: OECD, PISA 2009 Database; Tables B2.1 and B2.7.

As shown in Figure 2.4, stratification between publicly and privately managed schools is reduced in most countries and economies after the level of public funding has been accounted for, as socio-economically advantaged schools tend to receive a greater proportion of funding from parents, and less funding from the government, than disadvantaged schools (Table B2.6). Among 25 OECD countries and 16 partner countries that show stratification in favour of privately managed schools, after accounting for the proportion of public funding invested in individual schools, 13 OECD countries and 4 partner countries show no difference in socio-economic background between students who attend publicly managed schools and those who attend privately managed schools (Figure 2.5). This means that, in these countries, stratification between publicly and privately managed schools is mainly driven by the different levels of public funding for schools. However, 12 OECD countries and 11 partner countries (Mexico, Chile, Slovenia, Spain, Canada, Sweden, Belgium, Hungary, Denmark, the Czech Republic, Australia, Ireland, the partner countries Panama, Tunisia, Peru, Uruguay, Qatar, Colombia, Argentina, Kyrgyzstan, Albania, Brazil, and the partner economy Dubai [UAE]) show socio-economic stratification in favour of privately managed schools even after accounting for the level of public funding invested in individual schools.

So what other aspects, in addition to funding, can explain these differences in stratification? Two of these, namely school admissions criteria and school quality, are examined in Chapter 4.



■ Figure 2.5 ■

Countries with and without stratification, before and after accounting for the proportion of public funding for schools

BEFORE accounting for the proportion of public funding for schools		AFTER accounting for the proportion of public funding for schools
Socio-economic stratification <i>in favour of publicly managed schools</i>	Luxembourg Chinese Taipei	Socio-economic stratification <i>in favour of publicly managed schools</i>
No socio-economic stratification	Indonesia	No socio-economic stratification
	Finland Korea Netherlands Hong Kong-China	
Socio-economic stratification <i>in favour of privately managed schools</i>	Trinidad and Tobago	Socio-economic stratification <i>in favour of publicly managed schools</i>
	Estonia Germany Greece Israel Italy Japan New Zealand Poland Portugal Slovak Republic Switzerland United Kingdom United States Jordan Kazakhstan Shanghai-China Thailand	No socio-economic stratification
	Australia Belgium Canada Chile Czech Republic Denmark Hungary Ireland Mexico Slovenia Spain Sweden Albania Argentina Brazil Colombia Dubai (UAE) Kyrgyzstan Panama Peru Qatar Tunisia Uruguay	Socio-economic stratification <i>in favour of privately managed schools</i>

Source: OECD, *PISA 2009 Database*; Tables B2.1 and B2.7.

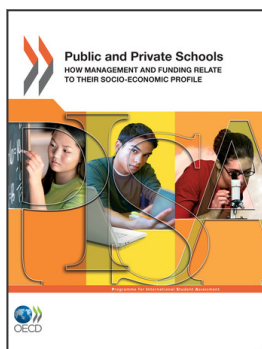


Reference

Hirsch, D. (2002), "What Works in Innovation in Education, School: A Choice of Directions", *CERI Working Paper*, OECD Publishing.

Notes

1. The difference in the average socio-economic background of students who attend privately managed schools and those who attend publicly managed schools is used as a measure of socio-economic stratification. Stratification measures are often contingent on some contextual conditions, such as overall disparities in students' socio-economic background within countries, differences in students' socio-economic background between schools within countries, and the size of the private sector. Thus, more elaborated measures of stratification are developed after accounting for these contextual conditions. The results show that the more elaborated measures of stratification (i.e. the percentage of ESCS variance accounted for by schools being managed publicly or privately) are highly correlated with the simple stratification measure used in this report. Thus, the findings based on this simple stratification measure will be robust.
2. Among OECD and partner countries, 25% of the variation in performance can be explained by the different levels of socio-economic stratification. Among OECD countries only, 15% of performance variation can be explained by the different levels of stratification.
3. Strictly speaking, the percentage of funding for private schools that comes from government sources (asked in Question 03 of the PISA 2009 School Questionnaire) would not include the costs that governments cover through tuition tax credits (i.e. governments pay the costs of private schools through foregone revenues); but this percentage shows the general level of countries' financial commitment to private schools.
4. A summary of these system-level characteristics is presented in Table B2.3.
5. Across OECD countries, stratification is regressed on the prevalence of private schools (i.e. the percentage of 15-year-old students who attend privately managed schools) and the square of this. Only 7% of the variation in stratification is explained.
6. Excluding the extreme case, Mexico, 37% of the variation in stratification across countries can be accounted for by the level of public funding for privately managed schools.
7. These percentages are obtained by squaring the correlation coefficients (i.e. $45 = -0.67^2 \cdot 100$). In those countries where privately managed schools receive higher proportions of funding from parents, stratification between public and private schools tends to be more pronounced. Across OECD countries, 42% of the variation in the stratification across countries can be accounted for by the level of funding from parents; across all participating countries, 35% of the variation in stratification can be accounted for in this way.



From:

Public and Private Schools

How Management and Funding Relate to their Socio-economic Profile

Access the complete publication at:

<https://doi.org/10.1787/9789264175006-en>

Please cite this chapter as:

OECD (2012), "Aspects of Socio-economic Stratification", in *Public and Private Schools: How Management and Funding Relate to their Socio-economic Profile*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264175006-6-en>

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