



5

Policy Implications of Equity in Education

This chapter analyses the different measures of equity in education produced by PISA and considers various policy options for improving performance and equity in education outcomes and opportunities for all students.



Home background influences success in education, and schooling often reinforces that influence. Although poor performance in school does not automatically stem from socio-economic disadvantage, the socio-economic status of students and schools does appear to have a powerful influence on learning outcomes. Because advantaged families are better able to reinforce and enhance the effect of schools, because students from advantaged families attend higher-quality schools, or because schools are simply better-equipped to nurture and develop young people from advantaged backgrounds, in many countries schools tend to reproduce existing patterns of socio-economic advantage, rather than create a more equitable distribution of learning opportunities and outcomes.

Other characteristics of students, besides their socio-economic status, are closely related to performance in PISA. Family structure, parents' job status, immigrant background and the language spoken at home are not only associated with performance differences, they are also interlinked. For example, children of low-educated parents, who also tend to be disadvantaged, are likely to be among those students whose parents are not working. In some countries, adult immigrants may find it hard to find an occupation that matches their education and skills; thus they may end up in low-status occupations, which, in turn, will be translated into a more disadvantaged socio-economic status among immigrant students.

In short, socio-economic disadvantage is closely interconnected with many of the student and school characteristics that are associated with performance. It is often difficult to disentangle the impact of socio-economic status on performance from that of other factors. In drawing conclusions for education policy and practice from the results presented here, it is crucial to understand the interplay between all these factors.

In general, the results that emerge from this volume show large differences between countries in the extent to which socio-economic status influences learning outcomes, which suggests that it is indeed possible to attain high levels of equity in education even among high-performing countries and economies. Differences across countries in the extent to which student- and school-level factors are associated with performance and socio-economic status show that system- and school-level policies and practices have an impact on both equity and performance outcomes.

This volume highlights the importance of taking socio-economic status into account when analysing performance differences. For example, students from single-parent families tend to underperform when compared with students from other types of families; however in many countries and economies, the performance difference disappears once students' socio-economic status is taken into account. Another finding shows that schools with large populations of immigrant students tend to underperform. Yet once the socio-economic status of students and, crucially, the socio-economic profile of the schools themselves – a measure of the concentration of socio-economic disadvantage at the school level – is taken into account much, if not all, of the underperformance of these schools can be linked to the disadvantaged socio-economic status of their students, both immigrant and non-immigrant.

The allocation of resources across schools is also associated with equity in outcomes and opportunities. With some notable exceptions, OECD countries try to allocate at least an equal, if not a larger, number of teachers per student in disadvantaged schools as they do in advantaged schools. This said, disadvantaged schools still report great difficulties in attracting qualified teachers. In other words, in disadvantaged schools, more resources do not necessarily translate into better-quality resources. This finding suggests that many students face the double drawback of coming from a disadvantaged background and attending a school with lower-quality resources. Many countries also show a strong relationship between the socio-economic status of students and their success at school. In some of these countries, these disparities are magnified by large variations in the socio-economic profile of schools' student populations.

This volume also presents evidence of the close relationship between education opportunities, as measured by students' reports on their exposure to and familiarity with formal mathematics, and students' socio-economic status and performance. Some education systems tend to separate students, either across classes or schools, according to their performance. Evidence from PISA shows that school systems that segregate students across schools according to their performance also tend to be those where students are segregated by socio-economic status and exposure to formal mathematics. That in some school systems disadvantaged students have less exposure to and familiarity with basic mathematic concepts suggests that these systems need to do more to address the academic needs of these students before they reach the end of compulsory education.

In Finland, early detection mechanisms, such as periodic individualised assessments of students by several groups of teachers, and special education opportunities enable educators to identify specific subject areas that students struggle to learn. Struggling students are then offered the necessary support early on in their schooling, before they become stuck



and cannot continue their education at the same pace as their peers. By contrast, in other systems, students are retained and keep receiving the same inadequate opportunities to learn until the system can no longer keep them behind. Israel (see Box IV.1.4) and Germany (Box II.3.2) have designed programmes that offer more learning opportunities to immigrant and minority students by providing a longer school day (Germany) or encouraging students to participate in smaller study groups (Israel).

The analyses pertaining to school effectiveness presented in this report are based on data describing school offerings at the late-primary or secondary levels. However, an assessment such as PISA provides an indication of students' cumulative learning such that a country's results in PISA, or in any assessment for that matter, depend on the quality of care and stimulation provided to children during infancy and their pre-school years, as well as on the opportunities children have to learn, both in school and at home, during their elementary and secondary school years.

Improving quality and equity thus requires a long-term view and a broad perspective. For some countries, this may mean safeguarding the healthy development of young children or improving early childhood education. For others, it may mean socio-economic reforms that enable families to provide better care for their children. And in many countries, it may mean greater efforts to increase socio-economic inclusion and improve school offerings.

PATTERNS IN THE RELATIONSHIP BETWEEN PERFORMANCE AND SOCIO-ECONOMIC STATUS

Australia, Canada, Estonia, Finland, Hong Kong-China, Japan, Korea, Liechtenstein and Macao-China show above-OECD-average mean performance and a weak relationship between socio-economic status and student performance (the strength of the socio-economic gradient). In Viet Nam, the strength of this relationship is around average while performance differences associated with socio-economic disparities (the slope of the socio-economic gradient) are below average (Figure II.5.1a). These countries combine high average performance with equity, demonstrating that the two are not mutually exclusive.

While the focus here is on socio-economic context, many of these countries also achieve greater levels of equity in other respects. Socio-economic disadvantage is, in many cases, a proxy for other sources of disadvantage. But this is not always the case. For example, in Finland, where differences in performance between advantaged and disadvantaged students are small, immigrant students underperform when compared to other students – and by a relatively large margin – even after accounting for socio-economic status. In Poland, rural schools perform well below urban schools, regardless of the schools' socio-economic profile.

Low performing students – those who do not reach a baseline level of performance (Level 2 in the PISA mathematics scale) – are at risk of later failing to integrate successfully into the labour market and into society more generally. Equity cannot be achieved where significant proportions of students fall behind. The same applies where a large proportion of 15-year-olds are not in school.

How can the impact of social background be moderated so that all students can realise their potential? The relationships between home background and performance described in this volume are manifested in very different patterns across different countries; thus, strategies for improvement need to be tailored accordingly. Figures II.5.1a and b show the key characteristics of the relationship between students' and schools' socio-economic profile and performance across education systems.

Figures II.5.2 to II.5.13 show the average performance and the socio-economic composition of the student population for each school in the countries/economies that participated in PISA 2012. As elsewhere in this volume, the socio-economic composition of a school is measured by the mean *PISA index of economic, social and cultural status* of the students who attend the school. Each circle in these figures represents one school, with the size of the circle proportional to the number of 15-year-olds enrolled in that school. The patterns show the extent to which students are segregated across schools according to their performance or socio-economic status. The figures show the overall performance differences across socio-economic groups, or the gradient between performance and socio-economic status, represented by the thin black line. The figures also present the average performance differences among schools with different socio-economic profiles – the between-school gradient, represented by the grey line, and the average within-school gradient, represented by the blue line. Schools above the between-school gradient (grey line) perform better than predicted by the socio-economic status of their students; schools below the between-school gradient perform worse than predicted by the socio-economic status of their students.


■ Figure II.5.1a ■

Summary of PISA measures of equity in education

	Average student performance	Percentage of students performing below Level 2	Strength of the relationship between student performance and socio-economic status	Performance differences across socio-economic status: slope of the socio-economic gradient	Length of the projection of the gradient line
			Percentage of explained variation in student performance	Score-point difference associated with a one-unit increase in socio-economic status	Difference between 95th and 5th percentile of socio-economic status
OECD average	494	23.1	14.8	39	2.83
Shanghai-China	613	3.8	15.1	41	3.00
Singapore	573	8.3	14.4	44	2.98
Hong Kong-China	561	8.6	7.5	27	3.10
Chinese Taipei	560	12.9	17.9	58	2.69
Korea	554	9.2	10.1	42	2.38
Macao-China	538	10.9	2.6	17	2.94
Japan	536	11.2	9.8	41	2.22
Liechtenstein	535	14.1	7.6	28	3.02
Switzerland	531	12.5	12.8	38	2.85
Netherlands	523	14.9	11.5	40	2.41
Estonia	521	10.6	8.6	29	2.48
Finland	519	12.3	9.4	33	2.39
Canada	518	13.9	9.4	31	2.71
Poland	518	14.5	16.6	41	2.74
Belgium	515	19.1	19.6	49	2.75
Germany	514	17.8	16.9	43	2.91
Viet Nam	511	14.3	14.6	29	3.84
Austria	506	18.8	15.8	43	2.72
Australia	504	19.8	12.3	42	2.48
Ireland	501	17.0	14.6	38	2.65
Slovenia	501	20.3	15.6	42	2.69
Denmark	500	17.0	16.5	39	2.57
New Zealand	500	22.8	18.4	52	2.58
Czech Republic	499	21.2	16.2	51	2.37
France	495	22.5	22.5	57	2.54
United Kingdom	494	21.9	12.5	41	2.53
Iceland	493	21.6	7.7	31	2.55
Latvia	491	20.1	14.7	35	2.77
Luxembourg	490	24.5	18.3	37	3.48
Norway	489	22.5	7.4	32	2.36
Portugal	487	25.0	19.6	35	3.74
Italy	485	24.8	10.1	30	3.13
Spain	484	23.7	15.8	34	3.26
Russian Federation	482	24.1	11.4	38	2.34
Slovak Republic	482	27.6	24.6	54	2.89
United States	481	26.0	14.8	35	3.12
Lithuania	479	26.2	13.8	36	2.75
Sweden	478	27.2	10.6	36	2.47
Hungary	477	28.2	23.1	47	3.02
Croatia	471	30.0	12.0	36	2.76
Israel	466	33.7	17.2	51	2.56
Greece	453	35.8	15.5	34	3.12
Serbia	449	39.1	11.7	34	2.87
Turkey	448	42.2	14.5	32	3.64
Romania	445	41.0	19.3	38	3.01
Bulgaria	439	43.9	22.3	42	3.23
United Arab Emirates	434	46.5	9.8	33	2.79
Kazakhstan	432	45.5	8.0	27	2.34
Thailand	427	50.0	9.9	22	3.79
Chile	423	51.7	23.1	34	3.66
Malaysia	421	52.0	13.4	30	3.24
Mexico	413	54.9	10.4	19	4.10
Montenegro	410	56.9	12.7	33	2.82
Uruguay	409	56.0	22.8	37	3.67
Costa Rica	407	60.1	18.9	24	3.93
Albania	394	60.8	m	m	m
Brazil	391	67.3	15.7	26	3.80
Argentina	388	66.7	15.1	26	3.60
Tunisia	388	67.9	12.4	22	4.11
Jordan	386	68.7	8.4	22	3.16
Colombia	376	74.0	15.4	25	3.83
Qatar	376	69.7	5.6	27	2.93
Indonesia	375	75.9	9.6	20	3.60
Peru	368	74.7	23.4	33	4.14

Countries and economies are ranked in descending order of mean mathematics performance.

Source: OECD, PISA 2012 Database, Tables II.2.1, II.2.8a, II.2.9a, II.2.13a and II.3.7.

StatLink  <http://dx.doi.org/10.1787/888932964870>



■ Figure II.5.1b ■

Summary of PISA measures of equity in education (continued)

Country	Average student performance	Within-school effects of socio-economic status ¹	Between-school effects of socio-economic status ²	Within-school strength of the relationship between student performance and socio-economic status ¹	Between-school strength of the relationship between student performance and socio-economic status ²	School variation in the distribution of socio-economic status ³	Within-school variation in socio-economic status as a proportion of the sum of the within- and between-school variation ⁴	Within-school variation in student performance as a proportion of the sum of the within- and between-school variation ⁵
		Student-level score-point difference associated with a one-unit increase in student-level socio-economic status	School-level score-point difference associated with a one-unit increase in the school mean socio-economic profile	Percentage of the overall variation in mathematics performance explained by students' and schools' ESCS	Percentage of the overall variation in mathematics performance explained by students' and schools' ESCS	Interquartile range of the distribution of school mean socio-economic profile		
OECD average	494	19	72	5.2	62.8	0.64	76	64
Shanghai-China	613	10	88	1.6	65.4	0.81	67	53
Singapore	573	22	85	4.4	61.2	0.57	76	63
Hong Kong-China	561	4	65	0.7	41.9	0.71	68	58
Chinese Taipei	560	27	123	5.3	72.2	0.60	77	58
Korea	554	14	114	1.5	57.3	0.46	78	60
Macao-China	538	7	31	5.8	14.2	0.50	74	58
Japan	536	4	150	1.8	65.9	0.50	78	47
Liechtenstein	535	8	132	2.2	51.0	0.56	86	37
Switzerland	531	25	66	7.2	44.0	0.62	83	64
Netherlands	523	9	147	1.5	57.8	0.51	82	34
Estonia	521	19	45	4.0	58.0	0.48	81	83
Finland	519	29	22	9.8	38.3	0.35	91	92
Canada	518	23	41	7.5	41.8	0.54	83	80
Poland	518	32	36	9.5	56.8	0.59	76	79
Belgium	515	19	102	4.8	70.1	0.75	72	49
Germany	514	11	103	0.4	71.3	0.78	74	47
Viet Nam	511	8	49	1.4	46.9	0.79	58	48
Austria	506	15	85	3.5	56.3	0.60	71	52
Australia	504	25	64	6.1	55.5	0.60	77	72
Ireland	501	26	52	6.9	79.3	0.48	80	82
Slovenia	501	3	126	0.1	77.7	0.81	75	41
Denmark	500	31	38	10.6	70.9	0.52	82	84
New Zealand	500	36	66	9.9	78.4	0.48	78	76
Czech Republic	499	14	127	2.1	70.5	0.50	76	49
France	495	22	113	w	w	w	w	w
United Kingdom	494	24	73	6.4	63.6	0.54	79	72
Iceland	493	25	45	5.9	68.8	0.49	86	90
Latvia	491	22	46	5.5	62.2	0.64	75	74
Luxembourg	490	20	68	6.7	93.3	1.03	74	59
Norway	489	27	49	5.6	46.4	0.30	91	87
Portugal	487	23	33	9.6	62.1	0.79	69	70
Italy	485	7	83	1.7	48.4	0.75	76	49
Spain	484	27	26	10.4	54.7	0.78	75	81
Russian Federation	482	26	47	5.0	44.5	0.53	75	73
Slovak Republic	482	21	86	4.6	73.8	0.62	64	50
United States	481	24	41	6.8	57.8	0.69	74	76
Lithuania	479	19	66	4.5	63.9	0.61	79	69
Sweden	478	28	41	9.8	55.5	0.49	87	87
Hungary	477	6	98	1.1	78.4	0.95	63	38
Croatia	471	12	90	2.3	58.8	0.54	76	56
Israel	466	24	98	5.2	66.5	0.72	75	58
Greece	453	18	55	4.7	65.1	0.69	73	68
Serbia	449	9	101	1.0	65.6	0.59	78	54
Turkey	448	6	83	1.4	57.6	0.70	72	38
Romania	445	17	57	4.5	61.5	0.68	64	55
Bulgaria	439	12	73	2.5	72.2	0.87	60	47
United Arab Emirates	434	12	71	1.9	41.6	0.68	74	56
Kazakhstan	432	15	45	3.1	29.7	0.53	77	63
Thailand	427	9	35	1.5	40.0	1.01	62	58
Chile	423	9	46	1.4	75.4	1.06	47	57
Malaysia	421	15	49	3.8	57.8	0.72	72	68
Mexico	413	5	29	0.9	46.1	1.02	57	65
Montenegro	410	12	102	2.4	85.7	0.52	81	64
Uruguay	409	15	52	4.3	74.1	0.82	60	58
Costa Rica	407	10	34	3.5	61.7	0.81	62	58
Albania	394	m	m	m	m	m	m	95
Brazil	391	8	46	2.0	61.5	0.81	63	57
Argentina	388	9	49	2.4	62.1	1.02	67	56
Tunisia	388	6	45	2.1	48.3	1.01	67	51
Jordan	386	11	47	4.8	42.6	0.54	80	64
Colombia	376	11	35	3.0	60.3	0.92	63	65
Qatar	376	10	73	1.7	29.7	0.50	75	54
Indonesia	375	6	37	1.3	32.7	0.89	63	48
Peru	368	10	49	1.9	78.4	1.23	54	54

1. Two-level regression of mathematics performance on student-level PISA index of economic, social and cultural status (ESCS) and school mean ESCS; within-school slope for ESCS and student-level variation explained by the model.

2. Two-level regression of mathematics performance on student ESCS and school mean ESCS; between-school slope of ESCS and school-level variation explained by the model.


3. Difference between the top and bottom quartiles calculated at the school level.

4. Also referred to as the index of social inclusion is calculated as $100*(1-\rho)$, where ρ stands for the intra-class correlation of socio-economic status, i.e. the variation in the PISA index of social, economic and cultural status of students between schools, divided by the sum of the variation in students' socio-economic status between schools and the variance in students' socio-economic status within schools.

5. Also referred to as the index of academic inclusion, which is calculated as $100*(1-\rho)$, where ρ stands for the intra-class correlation of performance, i.e. the variation in student performance between schools, divided by the sum of the variation in student performance between schools and the variation in student performance within schools.

Countries and economies are ranked in descending order of the average mathematics performance.

Source: OECD, PISA 2012 Database, Tables I.2.3a, II.2.1, II.2.8a, II.2.9a, II.2.13a and II.3.7.

StatLink  <http://dx.doi.org/10.1787/888932964870>



The figures summarise the three levels at which the relationship between student background and performance manifests itself. One is the strength of the relationship between student performance and socio-economic status in a given country, as measured by how much of the variation in student performance can be attributed to variations in socio-economic status. The second shows the degree to which the variation in average performance among schools can be attributed to the variation in the average socio-economic status of the schools' student populations. The third reflects the relationship between student performance and socio-economic status within a given school: how much of the variation in student performance within a given school can be attributed to variations in socio-economic status within that particular school. The amount of socio-economic variation and the overall performance differences within a country are also relevant. While these figures do not capture all of the inequities that may be observed within countries, they can provide a reliable indication of equity in education opportunities, particularly from an international perspective.

Analysing these patterns can help policy makers in designing policies to improve equity in education opportunities (Willms, 2006). Some options, which can be considered in combination, include:

- **Targeting low performance, regardless of students' background, either by targeting low-performing schools or low-performing students within schools, depending on the extent to which low performance is concentrated by school.** Where between-school differences in performance are relatively large, interventions may be targeted at low-performing schools; where they are relatively small, interventions can be directed at low-performing students in each school. Such policies often tend to provide a specialised curriculum or additional instructional resources for particular students based on their level of academic achievement. For example, some school systems provide early-prevention programmes that target children who are deemed to be at risk of failure at school when they enter early childhood programmes or schools, while other systems provide late-prevention or recovery programmes for children who fail to progress at a normal rate during the first few years of primary school. Some performance-targeted programmes aim to provide a modified curriculum for high-achieving students, such as programmes for gifted students. Grade repetition is also sometimes considered a performance-targeted policy, because the decision to have a student repeat a grade is usually based on school performance. However, in many cases, grade repetition does not entail a modified curriculum or additional instructional resources; therefore, it does not fit the definition of a performance-targeted policy used here. In fact, as Volume IV of this report shows, grade repetition is a costly option that is rarely advisable when designing policies for higher performance and greater equity. The focus of performance-targeted policies tends to be at the lower end of the performance scale, regardless of the students' socio-economic status, and their objective is to bring low-performing students up to par with their peers. This volume and Volume IV of this report describe how countries such as Colombia (Box IV.4.3), Mexico (Box II.2.4) and Poland (Box IV.2.1), for example, have improved the information infrastructure of their education systems so that they can better identify and support struggling students and schools.
- **Targeting disadvantaged children through a specialised curriculum, additional instructional resources or economic assistance for these students.** A relatively strong social gradient, which accounts for a substantial proportion of performance variation, can indicate the relevance of such policies. Again, policies can be designed either at the school or individual level, depending on the strength of the inter-school social gradient and the extent to which schools are segregated by socio-economic status. Some approaches select students on the basis of a risk factor other than socio-economic status, such as whether the students are recent immigrants, members of an ethnic minority, or living in a rural or low-income community. The important distinction is that these programmes select students based on the families' socio-economic status rather than on the students' cognitive ability. As mentioned in Boxes II.3.2 and IV.1.4, countries such as Germany and Israel are indeed targeting students with an immigrant background or schools in small and rural communities. While not tackling socio-economic disadvantage per se, because of the close interconnection among different sources of disadvantage, these policies address inequities in a broad sense. While policies targeting disadvantaged children can aim at improving these students' performance in school, they can also be used to provide additional economic resources to these students. The emphasis here is on improving the economic circumstances of students from poor families, rather than offering specialised curricula or additional educational resources. Good examples of these kinds of policies are conditional cash transfers, as implemented in Brazil, Colombia and Mexico, through which parents receive funds if their children attend school. Providing free transportation and free lunch programmes for students from poor families is an example. More generally, providing transfer payments to poor families is one of the primary policy levers at the national level. The distinction between these kinds of compensatory policies and socio-economically targeted policies is not always clear-cut. For example, some jurisdictions have compensatory funding formulas that allocate funds for education to schools based on their students' socio-economic profile. In some sense this is a compensatory policy, but it could also be considered a socio-economically targeted policy since the intention is to provide additional educational resources to students from disadvantaged backgrounds.



As described in the different volumes of this report, countries such as Brazil (see Box I.2.4), Germany (Box II.3.2), Israel (see Box IV.1.4), Mexico (Box II.2.4) and Turkey (see Box I.2.5) and have already implemented targeted policies to improve the performance of low-achieving schools or students, or have distributed more resources to those regions and schools that need them most.

- **Applying more universal policies to raise standards for all students.** These types of policies are likely to be most relevant in countries with weaker gradients and less variation in student performance. They can involve altering the content and pace of the curriculum, improving instructional techniques, introducing full-day schooling, changing the age of entry into school, or increasing the time spent in classes. Some countries, such as Denmark and Germany, responded to PISA 2000 results by introducing major school and curricular reforms that included some of these changes. There have also been efforts to increase parents' engagement, including by encouraging greater involvement at home and more participation in school governance. Many universal policies are directed at changing teacher practices, or they aim to increase the accountability of schools and school systems by assessing student performance. As described in this and other volumes of this report, some countries have introduced system-wide reforms that are aimed at moving towards more comprehensive schooling (Poland) or less tracking (Germany). These reforms simultaneously address various sources of inequity, such as a socio-economically disadvantaged background, immigrant status or a challenging family structure. Some countries are focusing on improving the overall quality of educational resources – including by recruiting and hiring high-quality teachers – and making them available to all schools, particularly disadvantaged schools. Countries that have improved their performance in PISA, like Brazil (see Box I.2.4), Colombia (see Box IV.4.3), Estonia (see Box I.5.1), Israel (see Box IV.1.4), Japan (see Box III.3.1) and Poland (see Box IV.2.1), for example, have established policies to improve the quality of their teaching staff by adding to the requirements to earn a teaching license, providing incentives for high-achieving students to enter the profession, increasing salaries to make the profession more attractive and to retain more teachers, or by offering incentives for teachers to engage in in-service teacher-training programmes.
- **Including marginalised students in mainstream schools and classrooms.** Inclusive practices often concentrate on including students with disabilities in regular classrooms, rather than segregating them in special classes or schools. This volume considers inclusive policies as those that aim to include students who may be segregated, for example by socio-economic disadvantage. Some inclusive policies try to reduce between-school socio-economic segregation by redrawing school-catchment boundaries, amalgamating schools, or by creating magnet schools in low-income areas. As discussed in Volume IV of this report, many school systems are highly stratified. In these systems, there may be more incentives for schools to select the best students, and fewer incentives to work with difficult students if there is an option of transferring them to other schools. Some of the school systems that have improved in performance and equity in recent years are becoming more inclusive. For example, Poland (see Box IV.2.1) reformed its education system by delaying the age of selection into different programmes; and schools in Germany (Box II.3.2) are also moving towards reducing the levels of stratification across education programmes.

The rest of this chapter describes various policy options available to countries, depending on how student performance is related to the social context of students and schools. If the proportion of low-performing students is large, then policy interventions should target these students. Box II.5.1 offers guidance on designing policies to improve performance and equity in other cases. For example, universal policies are most beneficial for countries shown in the top-left quadrant. Policies that target socio-economic disadvantage may be more effective for the countries shown in the right quadrants, while policies that target low performance may be more effective for countries shown in the bottom quadrants.

Box II.5.1. **A framework of policies to improve performance and equity in education**

This volume identifies two main measures of equity in education outcomes: the strength of the relationship between performance and socio-economic status (the strength of the socio-economic gradient) and the size of performance differences across socio-economic groups (the slope of the socio-economic gradient). The following typology describes countries based on their mean performance and depending on whether they score above or below the OECD average in these measures.

...



		Performance differences across socio-economic groups (slope of the socio-economic gradient)		
		Below OECD average: <i>Flat</i> socio-economic gradient	Average	Above OECD average: <i>Steep</i> socio-economic gradient
Strength of the relationship between performance and socio-economic status: (strength of the socio-economic gradient)	Below OECD average: <i>Weak</i> socio-economic gradient	Canada Estonia Finland Hong Kong-China <i>Iceland</i> <i>Italy</i> <i>Jordan</i> <i>Kazakhstan</i> Macao-China <i>Mexico</i> <i>Montenegro</i> <i>Norway</i> <i>Qatar</i> <i>Serbia</i> <i>Thailand</i> <i>United Arab Emirates</i>	<i>Croatia</i> Japan Korea Netherlands Liechtenstein <i>Sweden</i>	Australia
	Average	<i>Argentina</i> <i>Brazil</i> <i>Colombia</i> <i>Costa Rica</i> <i>Greece</i> <i>Indonesia</i> <i>Malaysia</i> <i>Spain</i> <i>Tunisia</i> <i>Turkey</i> <i>United States</i> Viet Nam	Austria Denmark Germany Ireland <i>Latvia</i> <i>Lithuania</i> Poland <i>Romania</i> <i>Russian Federation</i> Shanghai-China Slovenia Switzerland <i>United Kingdom</i>	<i>Czech Republic</i> <i>Israel</i> Singapore
	Above OECD average: Strong socio-economic gradient	<i>Chile</i> <i>Luxembourg</i> <i>Peru</i> <i>Portugal</i>	<i>Bulgaria</i> <i>Uruguay</i>	Belgium <i>France</i> <i>Hungary</i> New Zealand <i>Slovak Republic</i> Chinese Taipei

Notes: Countries and economies with mean mathematics performance above the OECD average are shown in **bold**. Countries and economies with mean mathematics performance below the OECD average are shown in *italics*.

Considering these two dimensions of equity in education and the policy options described above can help policy makers map a way forward to raise quality and improve equity.

Performance differences across the socio-economic spectrum are:		
	Small: Flat gradient	Large: Steep gradient
Impact of socio-economic status on performance is weak	When performance differences across the socio-economic spectrum are small and students often perform better (or worse) than expected, given their socio-economic status, one of the main policy goals is to improve performance across the board. In these cases, universal policies tend to be most effective. These types of policies include changing curricula or instructional systems and/or improving the quality of the teaching staff, e.g. by requiring more qualifications to earn a teaching license, providing incentives for high-achieving students to enter the profession, increasing salaries to make the profession more attractive and to retain more teachers, and/or offering incentives for teachers to engage in in-service teacher-training programmes.	When performance differences across the socio-economic spectrum are large and students often perform better (or worse) than expected given their socio-economic status, one of the main policy goals is to improve performance among the lowest performers, regardless of their socio-economic status. In these cases, targeting disadvantaged students only would provide extra support to some students who are already performing relatively well, while it would leave out some students who are not necessarily disadvantaged but who perform poorly. Policies can be targeted to low-performing students if these students can be easily identified, or to low-performing schools, particularly if low performance is concentrated in particular schools. Examples of such policies involve evaluation, feedback and appraisals for students, teachers and schools, or establishing early-warning mechanisms and providing a modified curriculum or additional instructional support for struggling students.
Impact of socio-economic status on performance is strong	When performance differences across the socio-economic spectrum are small but students perform as expected, given their socio-economic status, one of the main policy goals is to dismantle the barriers to high performance associated with socio-economic disadvantage. In these cases, effective compensatory policies target disadvantaged students or schools, providing them with additional support, resources or assistance. Free lunch programmes or free textbooks for disadvantaged families are other examples.	When performance differences across the socio-economic spectrum are large and students perform as would be expected, given their socio-economic status, one of the main policy goals is to reduce performance differences and improve performance particularly among disadvantaged students. A combination of policies targeting low performance and socio-economic disadvantage tend to be most effective in these cases, since universal policies may be less effective in improving both equity and performance simultaneously.

...



Another important aspect to consider is whether these policies target students or schools. In many cases, it may not be cost-effective to target individual students who are struggling in a particular subject area or who are facing a particularly challenging situation in or outside of school. The evidence collected in PISA can provide some indication as to when school- or student-level interventions would prove more effective. Two indicators offer guidance in this respect: the extent of between-school differences in socio-economic profiles, and the relationship between a school's socio-economic profile and its mean performance.

Where few differences are observed across schools, targeting students within schools is an option. By contrast, if large performance or socio-economic differences are observed between schools, then targeting specific schools – for example, low-performing or socio-economically disadvantaged schools – becomes a possibility. Targeting socio-economically disadvantaged schools may prove effective where there are large performance differences across schools related to socio-economic status.

A DISPROPORTIONATE NUMBER OF LOW-PERFORMING STUDENTS

Where many students score below the baseline level of proficiency, policies that target low-performing students may be more effective, regardless of those countries'/economies' level of equity in education. The proportion of students who score below proficiency Level 2 in mathematics is particularly large – more than 40% – in Albania, Argentina, Brazil, Bulgaria, Chile, Colombia, Costa Rica, Indonesia, Jordan, Kazakhstan, Malaysia, Mexico, Montenegro, Peru, Qatar, Romania, Thailand, Tunisia, Turkey, the United Arab Emirates and Uruguay (Figure II.5.1). In these countries, socio-economic status is not strongly related to performance (except in Bulgaria, Chile, Costa Rica, Peru and Uruguay), and performance differences across socio-economic groups are below the OECD average (except in Bulgaria, Romania and Uruguay, where they are at the OECD average). Performance is generally poor and there is little variation in performance among students, even though differences in socio-economic status may be considerable. In all these countries, the range of socio-economic status (the difference in socio-economic status between the top and bottom 5% of students) is above the OECD average (except in Kazakhstan, where it is below average, and Montenegro and the United Arab Emirates, where it is average). In addition, in many of these countries, there are many 15-year-olds who are not enrolled in school and who did not participate in the PISA assessment. Because this population is likely to be socio-economically disadvantaged, the students in these countries and economies appear as a more homogeneous population than the entire group of 15-year-olds. In some of these countries, the PISA measures of socio-economic status may not discriminate sufficiently among levels of disadvantage. Figure II.5.2 contrasts the profiles of some of these countries.

Some countries in this group, like Brazil, Colombia and Mexico, have implemented policies targeting socio-economically disadvantaged students. The fairly small proportion of variation in student performance that is explained by socio-economic status suggests that poor performance deserves as much attention as socio-economic disadvantage.

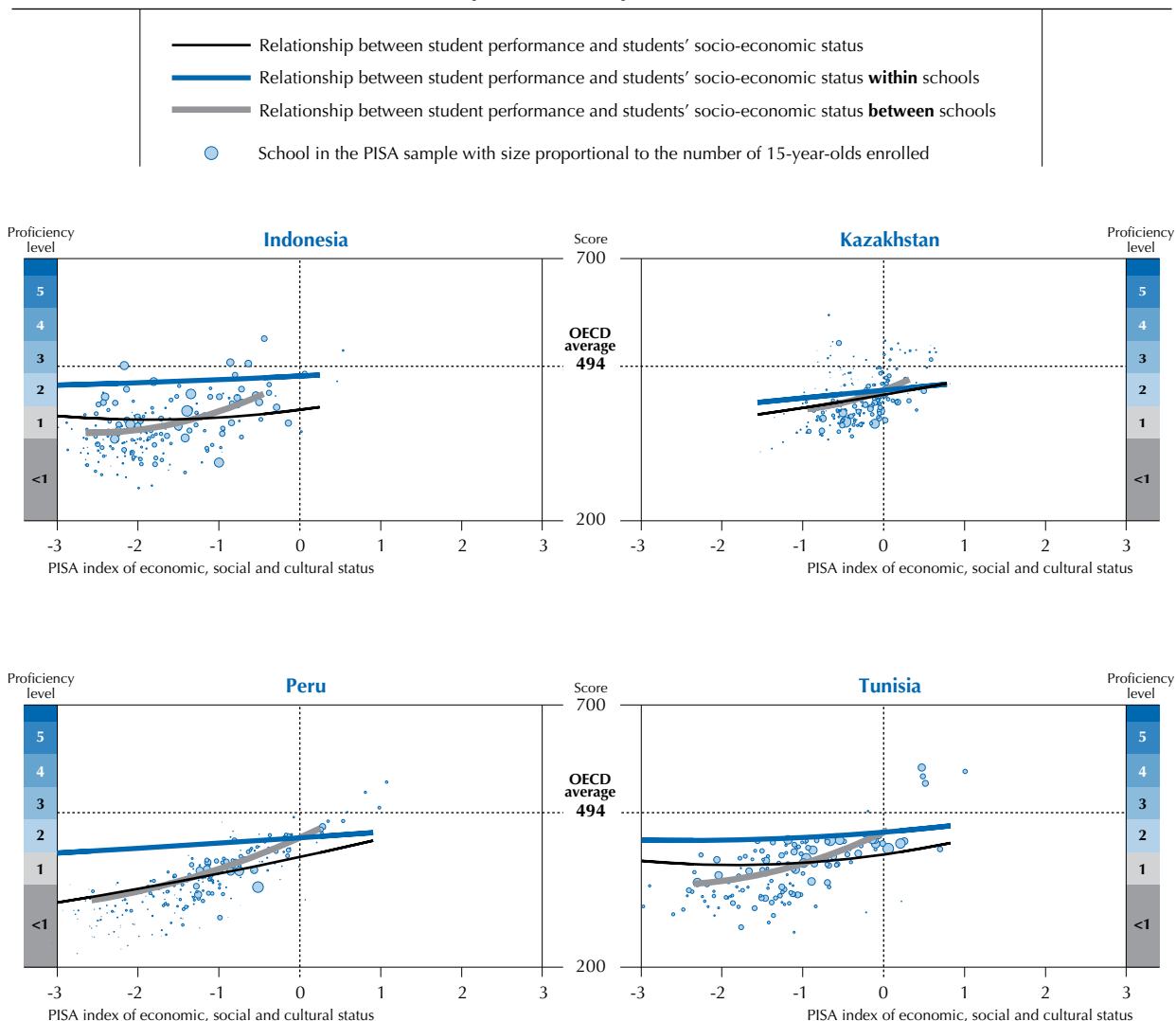
DIFFERENT SLOPES AND STRENGTHS OF SOCIO-ECONOMIC GRADIENTS

School administrators often wonder whether efforts to improve student performance should be targeted mainly at those students who perform poorly or those from socio-economically disadvantaged backgrounds. Performance differences across the socio-economic spectrum, together with the proportion of performance variation explained by socio-economic status, are useful indicators for answering this question. There is an important distinction between the slope of the social gradient, which refers to the average size of the performance gap associated with a given difference in socio-economic status, and its strength, which is associated with how closely students conform to predictions of performance based on their socio-economic status.


In countries with relatively flat gradients, i.e. where performance differences related to socio-economic status are small, policies that specifically target students from disadvantaged backgrounds would not, by themselves, address the needs of many of the country's low-performing students.

■ Figure II.5.2 ■

Relationship between school performance and schools' socio-economic profile in countries that have large proportions of students performing below Level 2: Indonesia, Kazakhstan, Peru and Tunisia



Source: OECD, PISA 2012 Database.

StatLink  <http://dx.doi.org/10.1787/888932964984>

Universal policies for countries where performance differences are small and there is a weak relationship between performance and socio-economic status

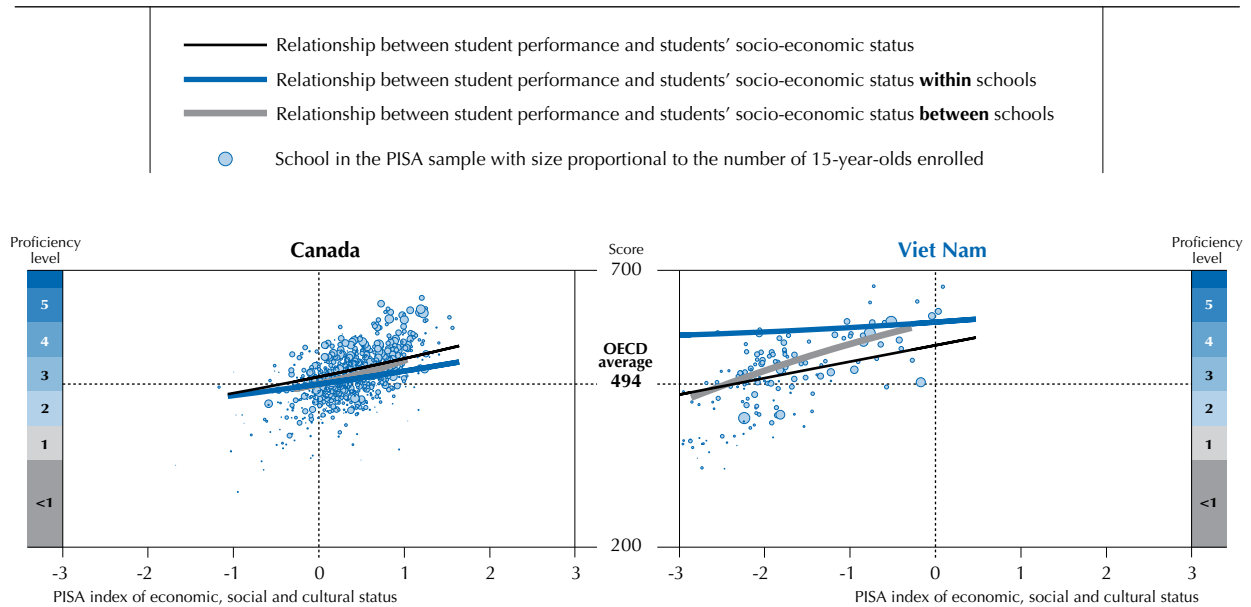
Canada, Estonia, Finland, Hong Kong-China and Macao-China are the only school systems that participated in PISA 2012 that share above-average performance and above-average equity, whether measured by the strength of the relationship between socio-economic status and performance or the size of the performance differences across socio-economic groups (Figure II.5.1a). Within this group, even large differences in students' socio-economic status (such as those observed in Hong Kong-China and Macao-China, where the length of the gradient is above the OECD average) are, on average, not associated with large performance differences among students. In general, universal policies that reach all students are more likely to help these countries improve their performance and maintain above-average levels of equity in education outcomes. Japan, Korea and Liechtenstein also share above-average performance and a weak relationship between socio-economic status and performance, but performance differences across socio-economic




status are around average. Beyond universal policies, these countries may consider policies targeted to low performers who may not necessarily be defined by their socio-economic status (for example, immigrant students in Finland), or to poor-performing schools, when differences between schools are very large. In no high-performing country is the socio-economic gradient flat and strong.

■ Figure II.5.3 ■

Relationship between school performance and schools' socio-economic profile in countries with high performance and flat and weak gradients: Canada and Viet Nam



Source: OECD, PISA 2012 Database.

StatLink  <http://dx.doi.org/10.1787/888932965003>

Among countries whose mean performance is below or around the OECD average, greater equity in outcomes implies that all students perform equally well – or poorly – regardless of their background or that there are small differences in performance between advantaged and disadvantaged students. Iceland and Norway show average performance and high equity. Among OECD countries, Italy and Mexico show below-OECD-average performance and high equity; however some 25% of students in Italy and 55% of students in Mexico are low performers. Among the partner countries, Jordan, Kazakhstan, Montenegro, Qatar, Thailand and the United Arab Emirates all share high levels of equity and large proportions of students who perform below the baseline level of performance. In Greece, Spain, the United States and Viet Nam, performance differences related to socio-economic status (the slope of the gradient) are also below average, but the relationship between socio-economic status and performance (the strength of the gradient) is close to the OECD average. While Argentina, Brazil, Colombia, Indonesia, Malaysia, Tunisia and Turkey share this profile, in all of these countries more than 40% of students are low performers.

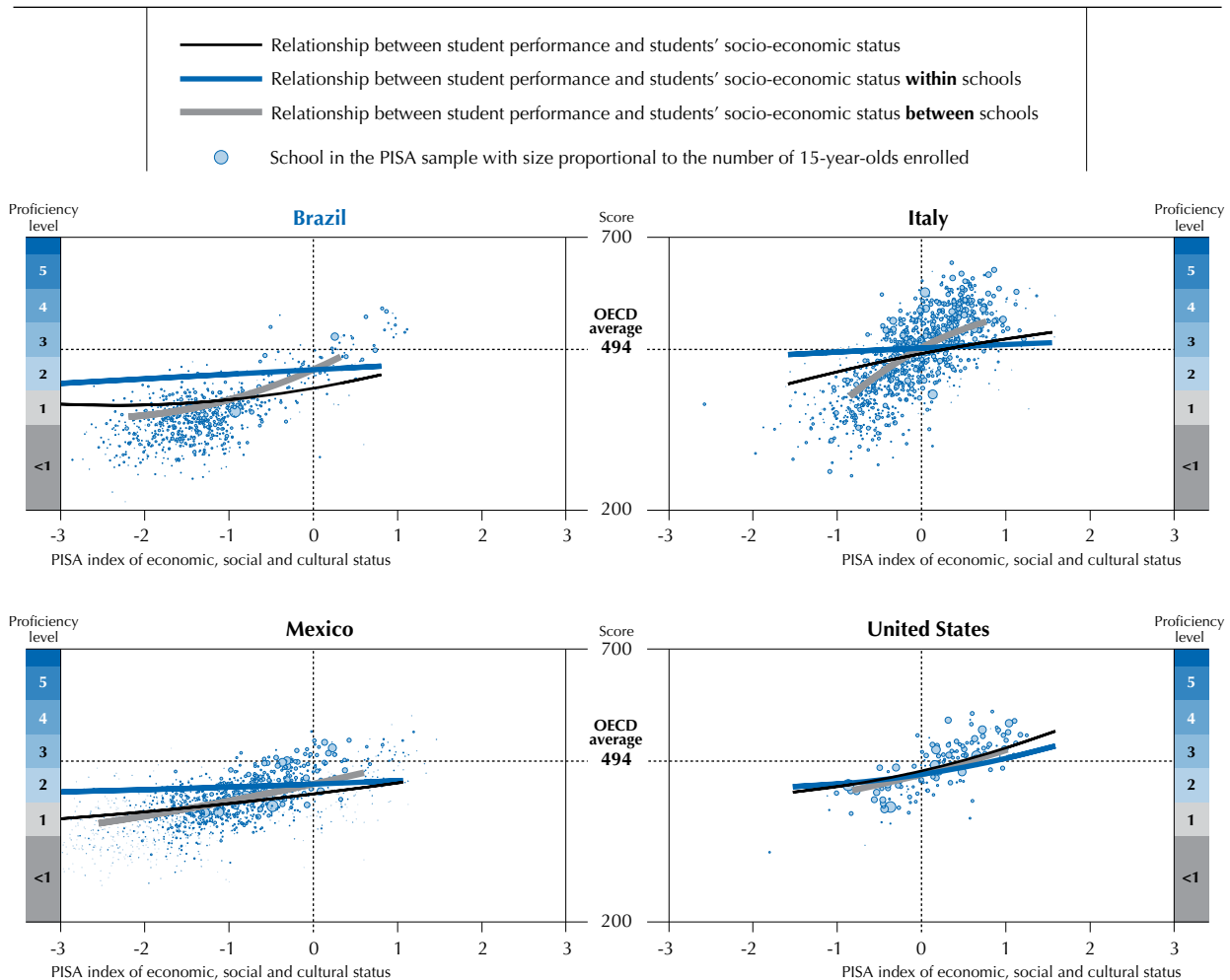
These data suggest that in many of these countries, a relatively smaller proportion of low-performing students come from disadvantaged backgrounds, and the relationship between performance and socio-economic status is weak. Thus, by themselves, policies that specifically target students from disadvantaged backgrounds would not address the needs of many of the country's lower-performing students. As is true in high-performing countries, in these countries, universal policies that reach all students and schools are likely to have more of an impact in improving performance while maintaining high levels of equity.

By contrast, targeting low achievers may prove more effective than targeting disadvantaged students. For example, if the goal is to ensure that most students achieve a minimum level of performance, policies that target disadvantaged students would be providing services to a sizeable proportion of students who already perform well. Where large proportions of students perform below the baseline level, policies targeting these students may be needed in order to ensure they are

not left behind. Among countries that perform below the OECD average, the proportion of students who score below the baseline level differs widely. In some countries, like Italy, the proportion is close to the OECD average, while in others, such as Argentina, Brazil, Colombia, Indonesia, Malaysia, Tunisia and Turkey, the proportion of students below the baseline level ranges from 42% in Turkey to 76% in Indonesia. Where the proportion of students who score below the baseline level is large, it is necessary to target these students and the schools they attend.

■ Figure II.5.4 ■

Relationship between school performance and schools' socio-economic profile in countries with average or low performance and flat and weak gradients: Brazil, Italy, Mexico and the United States



Source: OECD, PISA 2012 Database.
StatLink <http://dx.doi.org/10.1787/888932965022>

Policies that target socio-economic disadvantage for those countries where there are small performance differences and a strong relationship between performance and socio-economic status

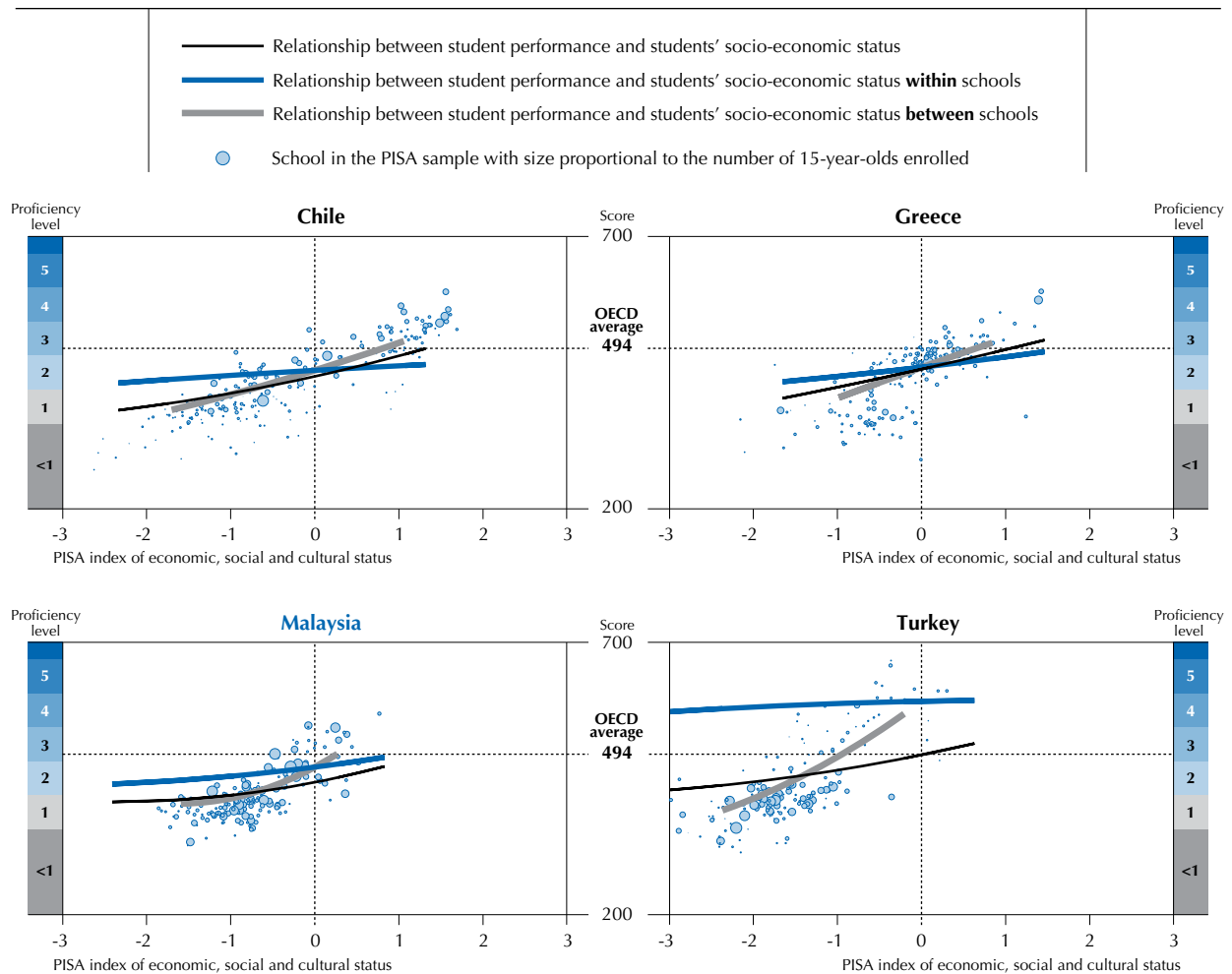
When the socio-economic gradient is flat but strong, meaning that performance differences related to socio-economic status are small, but there is a close relationship between socio-economic status and performance, a combination of universal policies and policies targeting disadvantaged students and schools may be most effective. One way of addressing the strong relationship between socio-economic status and performance is to add more flexibility to education systems, such as by offering pathways across programmes in tracked systems; another is to provide more and better resources and opportunities to disadvantaged students. Certain universal policies, such as increasing the amount or quality of the




time students spend at school, can also improve equity because they are likely to have a larger impact on disadvantaged students. Chile, Costa Rica, Peru and Portugal are the only countries where the socio-economic gradient is flat and strong. More than 40% of students in all of these countries, except Portugal, perform below the baseline proficiency level in mathematics. Policies that target low-performing students and schools, as well as universal policies to improve performance across the board, may be most effective in these countries.

■ Figure II.5.5 ■

Relationship between school performance and schools' socio-economic profile with average or low performance and flat and strong gradients: Chile, Greece, Malaysia and Turkey



Source: OECD, PISA 2012 Database.

StatLink  <http://dx.doi.org/10.1787/888932965041>

Policies that target both performance and socio-economic disadvantage for countries where there are large performance differences and a strong relationship between performance and socio-economic status

In countries where performance differences across socio-economic groups are very large (a steep gradient), policies that target disadvantaged students are likely to be more effective, particularly if the strength of the relationship between performance and socio-economic status is also above average.

New Zealand and Chinese Taipei are the only two high-performing countries/economies with below-average levels of equity in education outcomes. Targeting low-performing and/or disadvantaged students is a policy option for both of these countries, as the steepness of the gradient suggests that low-performing students could rapidly improve their

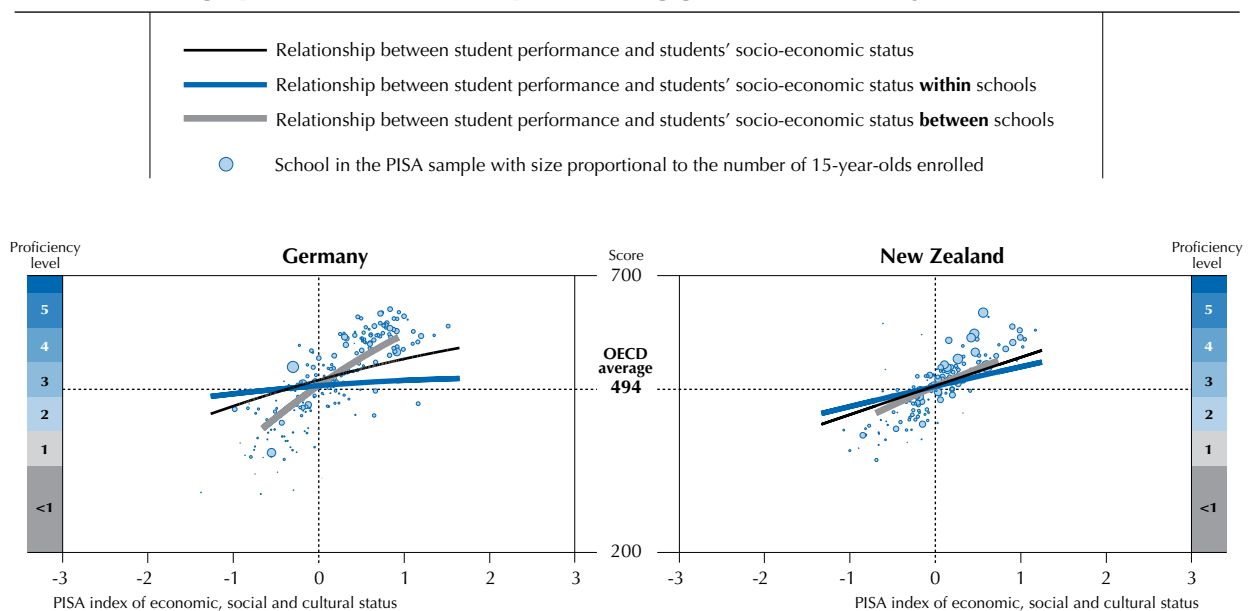


performance if their socio-economic status also improved. The stronger-than-average relationship between socio-economic status and performance, however, suggests that in these countries very few students overcome the barriers to high performance that are linked with socio-economic status. Therefore, these countries also need to provide greater opportunities for socio-economically disadvantaged students to achieve higher performance. A combination of policies to improve equity while maintaining high levels of performance at the system level appears to be the most advisable course of action for these countries.


Austria, Belgium and Singapore also share high performance and large performance differences across socio-economic groups, but the strength of the relationship between performance and socio-economic status is only average. To address those large differences, these countries can focus on compensatory policies that support disadvantaged students and schools so that they are given as many opportunities and resources as their more advantaged peers.

■ Figure II.5.6 ■

Relationship between school performance and schools' socio-economic profile in countries with high performance and steep and strong gradients: Germany and New Zealand



Source: OECD, PISA 2012 Database.

StatLink  <http://dx.doi.org/10.1787/888932965060>

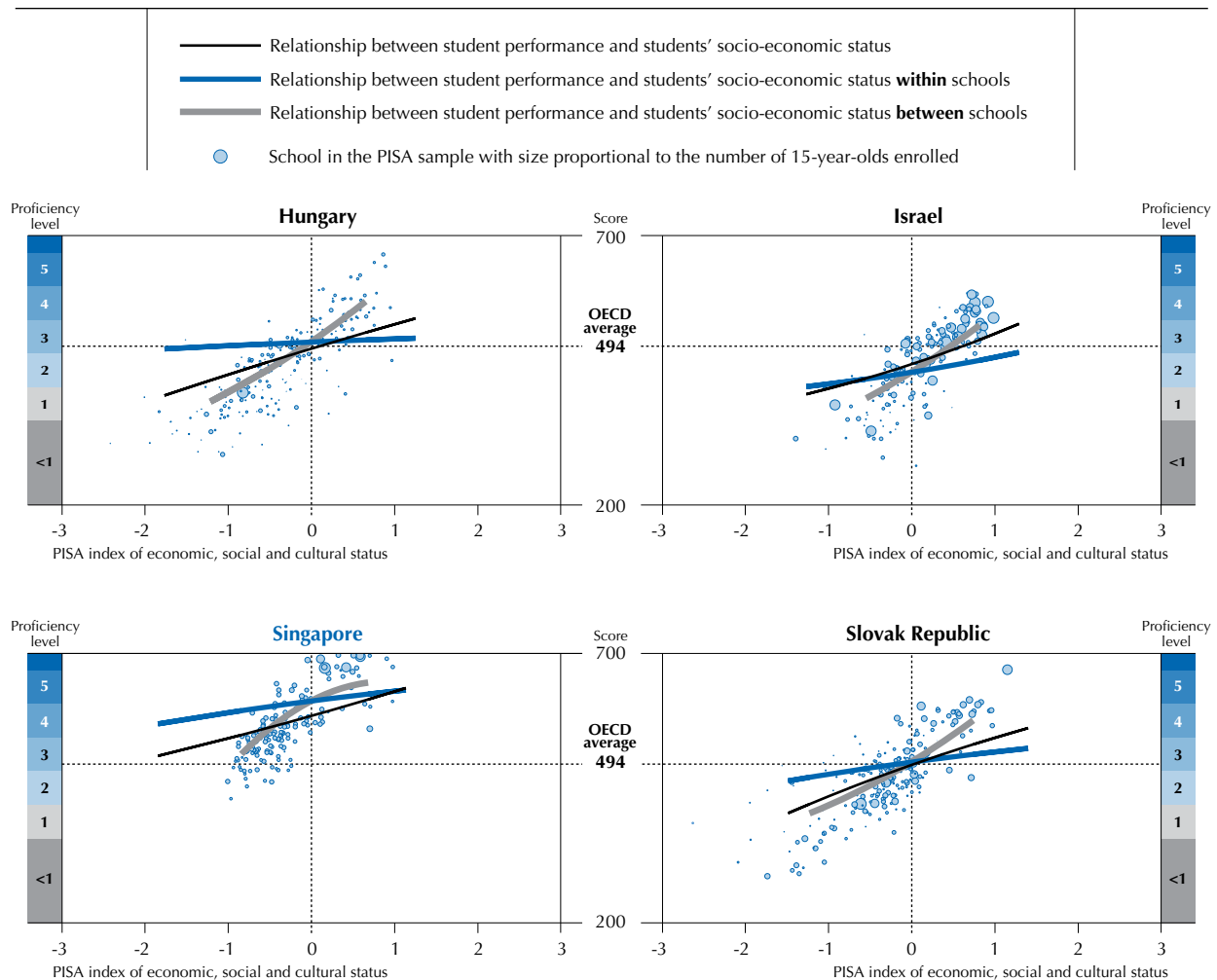
Where both poor performance and low equity are observed, such as in Hungary and the Slovak Republic, policies that target both performance and socio-economic disadvantage may prove effective in reaching those who need support the most – who, in these cases, are often the same students. The steep slope suggests that performance improves quickly as socio-economic status improves. However, the strong relationship between socio-economic status and performance suggests that few students perform better than what can be expected given their socio-economic status. Reforms that add flexibility to school systems, so that disadvantaged and poor-performing students have access to better resources and/or more and better opportunities to learn, can also help. Bulgaria, Luxembourg and Uruguay share this profile, although differences in performance related to socio-economic status are average, which suggests that universal policies aimed at improving the performance of all students may also be effective.

For countries where the impact of socio-economic status on performance is high (a steep slope), but only part of the variation in performance is explained by socio-economic status (a weak socio-economic gradient), policies that target disadvantaged students may not be as effective. In these countries, there tends to be a sizeable group of poor-performing students who are not disadvantaged. Among the high-performing countries, Australia is the only country participating in PISA 2012 with a weak relationship between socio-status and above-average performance differences across socio-economic groups.




■ Figure II.5.7 ■

Relationship between school performance and schools' socio-economic profile in countries with low performance and steep and strong gradients: Hungary, Israel, Singapore and the Slovak Republic



Source: OECD, PISA 2012 Database.

StatLink  <http://dx.doi.org/10.1787/888932965079>

These large differences suggest that targeting disadvantaged students and schools may help Austria improve equity while maintaining high performance. Viet Nam is the only high-performing country where there are small performance differences related to socio-economic status and where the strength of the relationship between performance and socio-economic status is around average. In this case, policies that target low-performing students and schools may help improve equity while maintaining high levels of performance.

LARGE SOCIO-ECONOMIC DISPARITIES

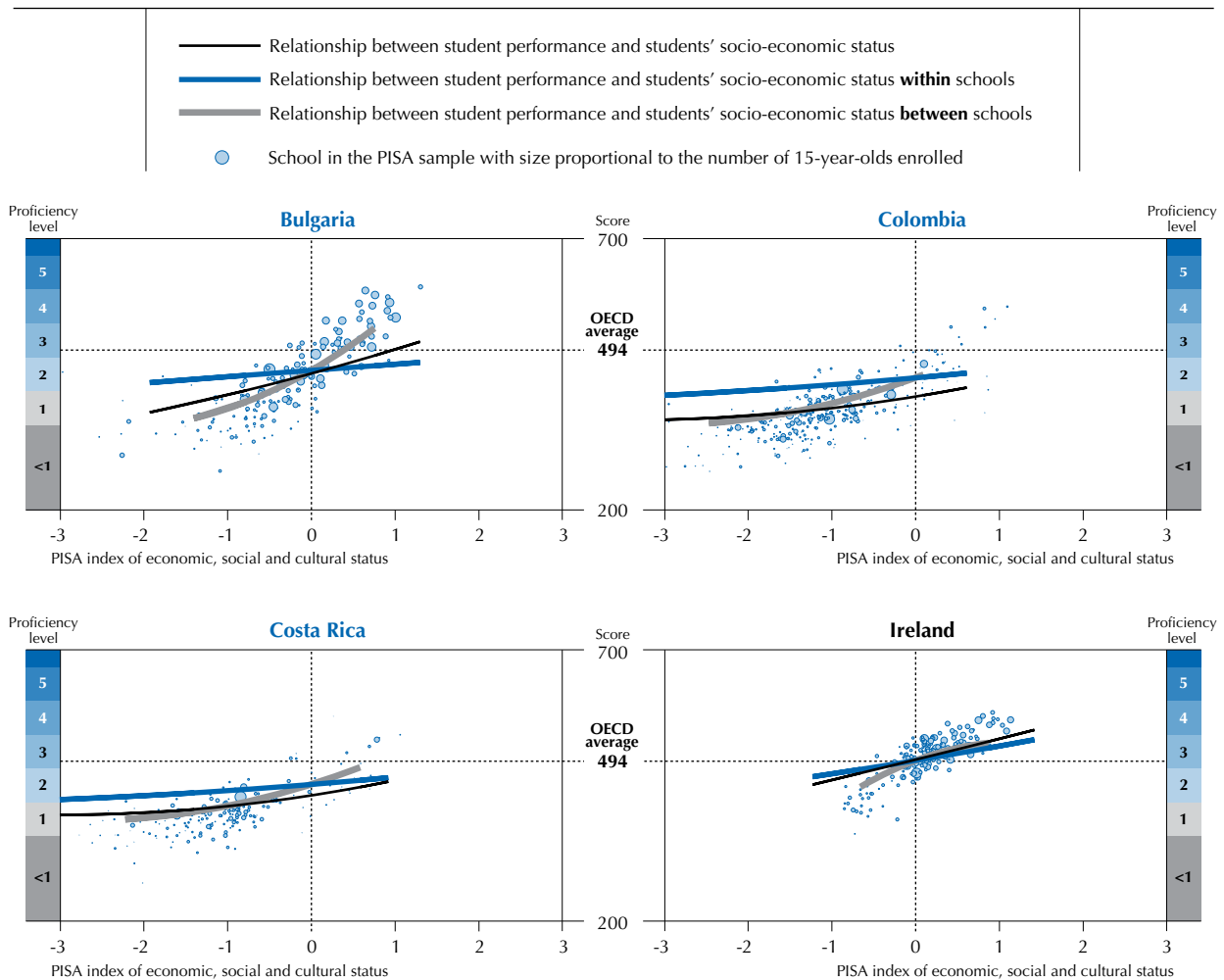
It is equally important to understand the degree of socio-economic disparity within a country when interpreting the relationship between performance and socio-economic status. For example, Bulgaria, Japan, Korea, Luxembourg, Sweden and Uruguay have socio-economic gradients with similar slopes (a performance difference of between 36 and 42 score points related to socio-economic status); but the range of values on the *PISA index of economic, social and cultural status* (the length of the gradient) between the 5th and 95th percentile of students spans at least 3.2 units on the index (more than three times the average difference in socio-economic status between two students randomly chosen across OECD countries) in Bulgaria, Luxembourg and Uruguay, but less than 2.5 units in Japan, Korea and Sweden.



In other words, the populations of 15-year-old students in Bulgaria, Luxembourg and Uruguay are far more socio-economically diverse than the student populations in Japan, Korea and Sweden. This difference partly explains why, in Sweden, for example, socio-economic status accounts for less-than-average variation in performance, while in Uruguay socio-economic status has a stronger-than-average impact on performance. Socio-economic diversity, measured in this way, is greatest in Chile, Mexico, Portugal and Turkey, among OECD countries; but many partner countries and economies also show greater-than-OECD-average socio-economic diversity, particularly Brazil, Colombia, Costa Rica, Peru, Thailand, Tunisia, Uruguay and Viet Nam. In all of these countries and economies, compensatory policies that target disadvantaged students and schools can help improve performance and equity in education.

■ Figure II.5.8 ■

Relationship between school performance and schools' socio-economic profile in countries with marked socio-economic disparities and average equity in outcomes: Bulgaria, Colombia, Costa Rica and Ireland



Source: OECD, PISA 2012 Database.

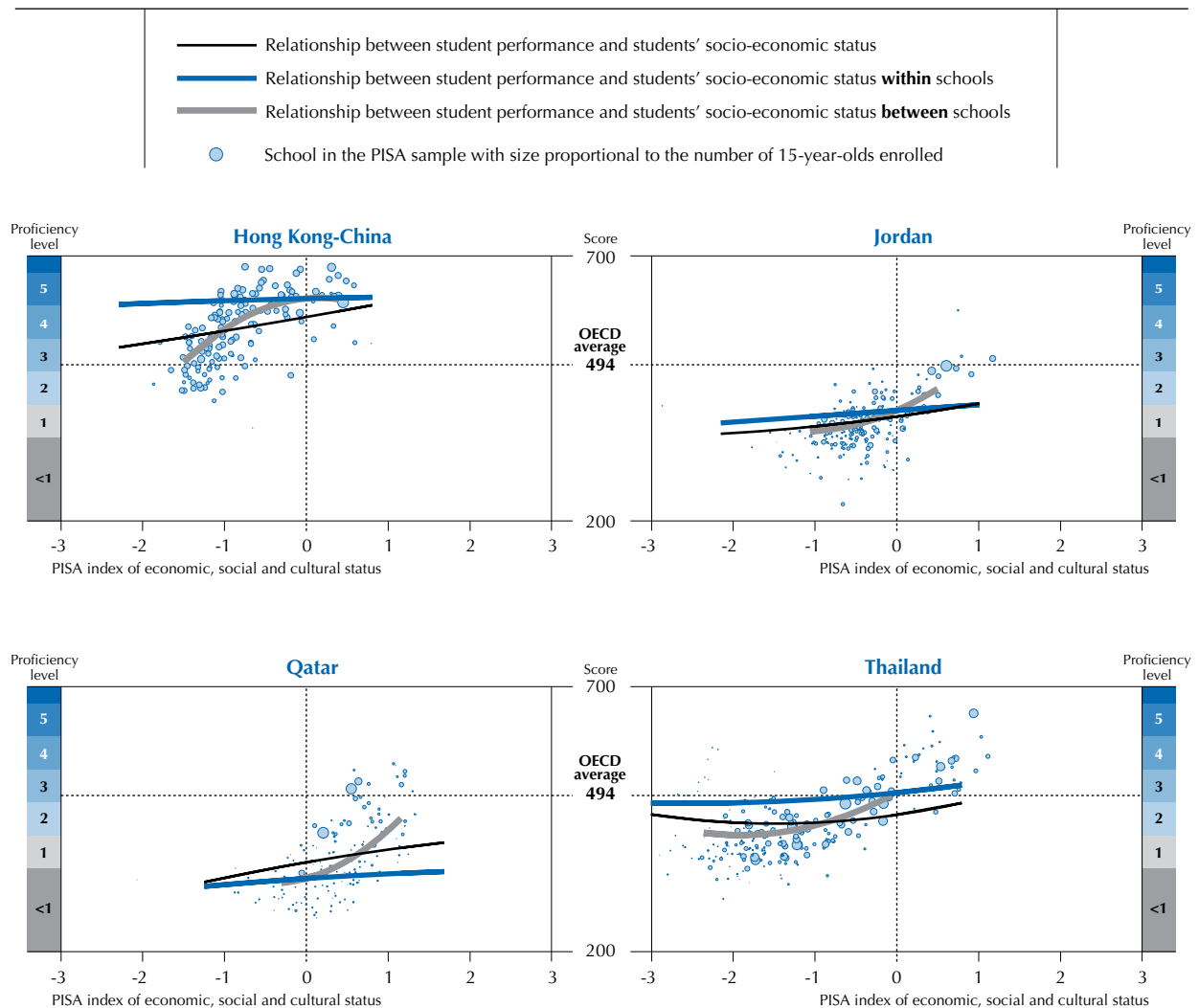
StatLink <http://dx.doi.org/10.1787/888932965098>

In countries with large disparities and a weak relationship between socio-economic status and performance, such as Mexico and Thailand, compensatory policies to help the most disadvantaged students would be effective. By contrast, where socio-economic disparities are smaller and have a weaker effect on performance, for example in the Czech Republic, Finland, Japan, Korea and Norway, policies targeting social reform are unlikely to be the most effective way of improving student performance because they are not likely to reach many students.



■ Figure II.5.9 ■

Relationship between school performance and schools' socio-economic profile in countries with high equity but marked socio-economic disparities: Hong Kong-China, Jordan, Qatar and Thailand



Source: OECD, PISA 2012 Database.

StatLink <http://dx.doi.org/10.1787/888932965117>

TARGETING LOW-PERFORMING AND SOCIO-ECONOMICALLY DISADVANTAGED SCHOOLS

When performance or socio-economic disparities between schools are large, policies that target schools rather than students may be more effective, particularly when there is a strong and marked relationship between a school's socio-economic profile and average performance.

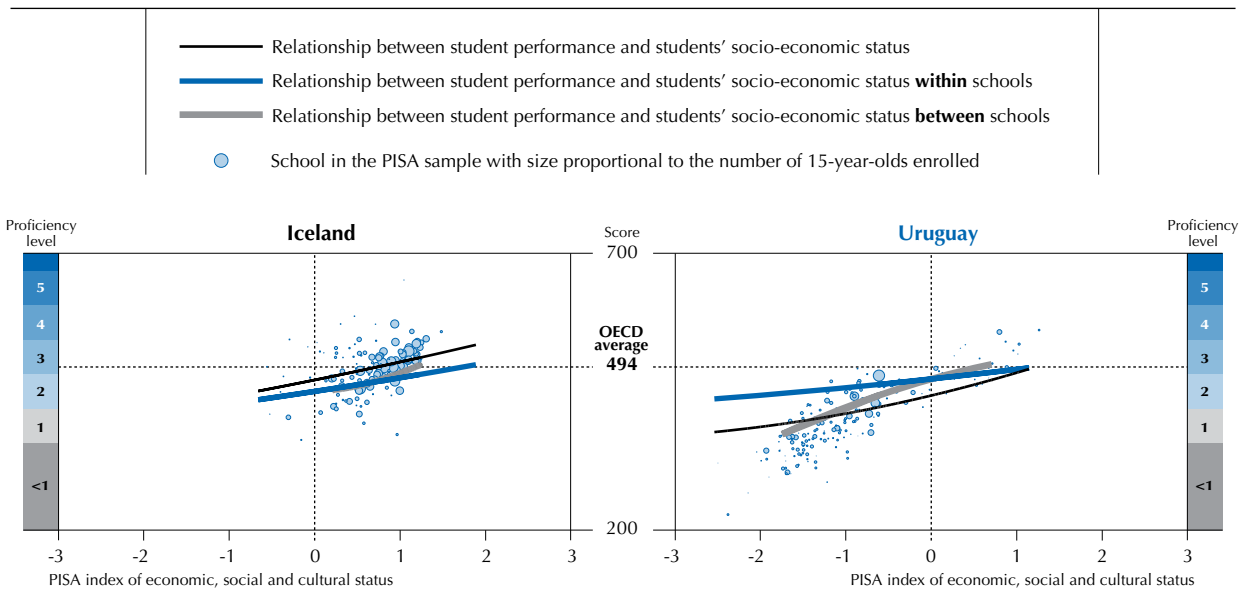
The relationship between a school's socio-economic profile and student performance can be described in several ways. One way is to focus on how much better a student who goes to a school with a more advantaged student population can be expected to perform in mathematics. A second is how closely the performance of individual students actually follows this prediction, or the strength of the relationship.¹ These factors are all important in countries where students' opportunities to learn are strongly affected by differences in schools' socio-economic profile. In countries where large differences are observed, policies that target disadvantaged schools are more likely to succeed in improving performance and equity.



As Figure II.5.1b shows, in Uruguay, 74% of the difference in student performance across schools is related to socio-economic factors, that is, schools tend to fall into two categories: higher-performing schools with a more advantaged socio-economic profile, and schools with lower performance and more disadvantaged student populations. Most important, the variation in the socio-economic profile of schools is great, meaning that there is a large difference in socio-economic status between advantaged and disadvantaged schools. In Iceland, while performance disparities related to schools' socio-economic profile are comparatively large as well (69%), the overall differences in the socio-economic profiles of schools are much smaller. That explains why Iceland has, overall, one of the more equitable education systems while Uruguay has one of the least equitable systems. In countries in which most of the variation is accounted for by between-school socio-economic factors, policies aimed at reducing social segregation should be a priority, as such disparities among schools tend to reinforce the inequities of the system.

■ Figure II.5.10 ■

Relationship between school performance and schools' socio-economic profiles in countries with strong between-school gradients: Iceland and Uruguay



Source: OECD, PISA 2012 Database.
StatLink <http://dx.doi.org/10.1787/888932965136>

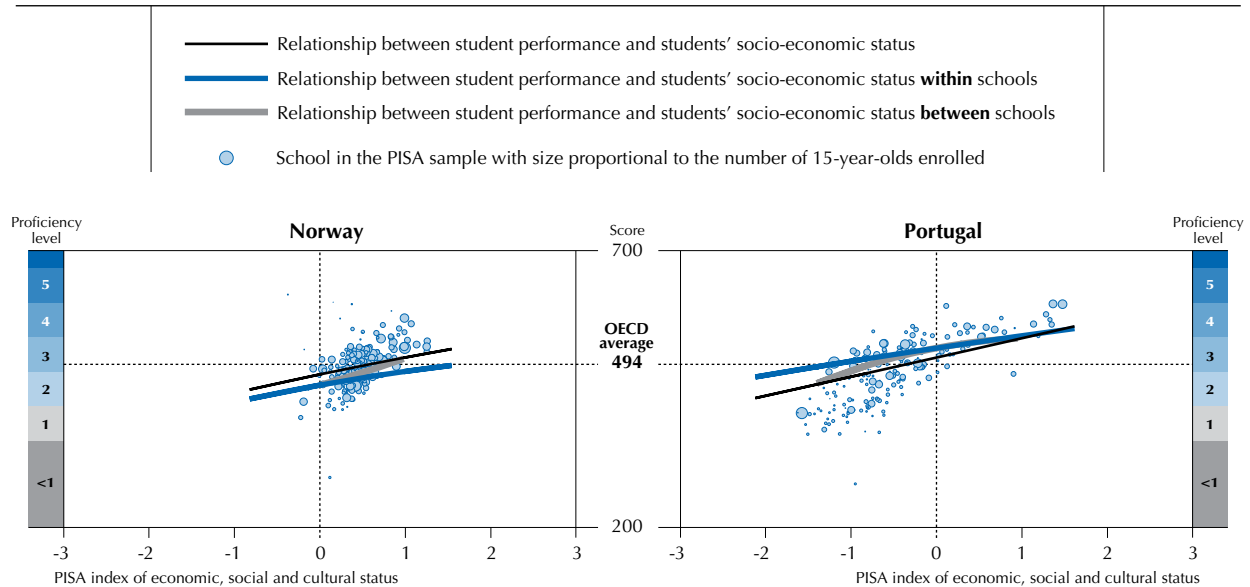
A similar contrast can be observed among countries where performance differences across socio-economic status are relatively small. For example, in Norway and Portugal, the between-school differences in mathematics performance are relatively small, around 49 and 33 score points, respectively (compared to an OECD average of more than 70 score points). However, schools vary considerably in their socio-economic profile. A school's socio-economic profile is a much better predictor of performance in Portugal, where 62% of the variation in performance is explained by the schools' socio-economic profile, than in Norway, where 46% of the variation in performance is so explained. That is, while many schools in Norway perform differently than what would have been predicted based on their socio-economic profile, in Portugal, socio-economic status is closely associated with a school's performance. Policies that target disadvantaged schools are thus more likely to be effective in Portugal. In Norway, these policies will not help low-performing schools that are not necessarily disadvantaged.

Targeting disadvantaged schools may be a viable option in those countries where differences in socio-economic profiles are large (i.e. the between-school socio-economic differences account for a large proportion of the variation in socio-economic status). Such policies may prove particularly effective where the relationship between performance and socio-economic status at the school level is marked, either because there are large performance differences across schools with different socio-economic profiles or because there is a strong relationship between the socio-economic profile of a school and mean student performance at the school.




■ Figure II.5.11 ■

Relationship between school performance and schools' socio-economic profile in countries with weak between-school gradients: Norway and Portugal



Source: OECD, PISA 2012 Database.

StatLink  <http://dx.doi.org/10.1787/888932965155>

Targeting disadvantaged schools may be important in Hungary, Shanghai-China and the Slovak Republic, where socio-economic differences between schools are large – they account for a larger-than-average proportion of the variation in socio-economic status (37%, 33% and 36%, respectively, compared with the OECD average of 24%, [Figure II.5.1b]) – and where between-school performance differences across socio-economic groups (98 score points, 88 points and 86 points, respectively) are above the OECD average (72 score points). In all three countries, schools' socio-economic profiles are strongly related to school mean performance, explaining between 65% of the variation in mean school performance in Shanghai-China and 78% in Hungary (compared with an OECD average of 63%). Argentina, Brazil, Bulgaria, Chile, Colombia, Costa Rica, Peru, Portugal, Romania and Uruguay also show large between-school differences in socio-economic profiles and a strong relationship between performance and socio-economic status. In all of these countries, performance differences across schools related to the schools' socio-economic profiles are below average (except in Bulgaria, where they are average); but the strength of the relationship between schools' mean performance and their socio-economic profiles are at or above average. The proportion of the performance differences explained by the variation in socio-economic profiles ranges from 60% in Colombia to 78% in Peru. Hong Kong-China is the only economy where differences between schools in socio-economic profiles are at the OECD average, but the strength of the relationship between schools' socio-economic profiles and performance is below average.

Targeting low-performing schools may also be an option, particularly when the school's socio-economic status is strongly related to performance differences. The evidence in PISA suggests that policies targeting low-performing schools may be particularly effective for Belgium, the Czech Republic, Germany, Hungary, the Slovak Republic and Slovenia. In all of these countries, between-school differences account for at least half of the variation in performance. The school systems of these countries tend to track students into different schools according to their performance, so it is not surprising that there are many between-school performance differences across these countries. The average impact of schools' socio-economic profile on performance (the between-school socio-economic gradient) ranges from 86 score points in the Slovak Republic to 127 points in the Czech Republic, compared with the OECD average difference of 72 score points. In all these countries, more than 70% of the differences in performance are explained by students' and schools' socio-economic status, compared with the OECD average of 63% (Figure II.5.1b). Socio-economic disparities across schools account for more than 35% of the variation in socio-economic status in Hungary and the Slovak Republic. Within-school differences in performance across socio-economic groups are above average only in the Slovak Republic.



TARGETING STUDENTS WITHIN SCHOOLS

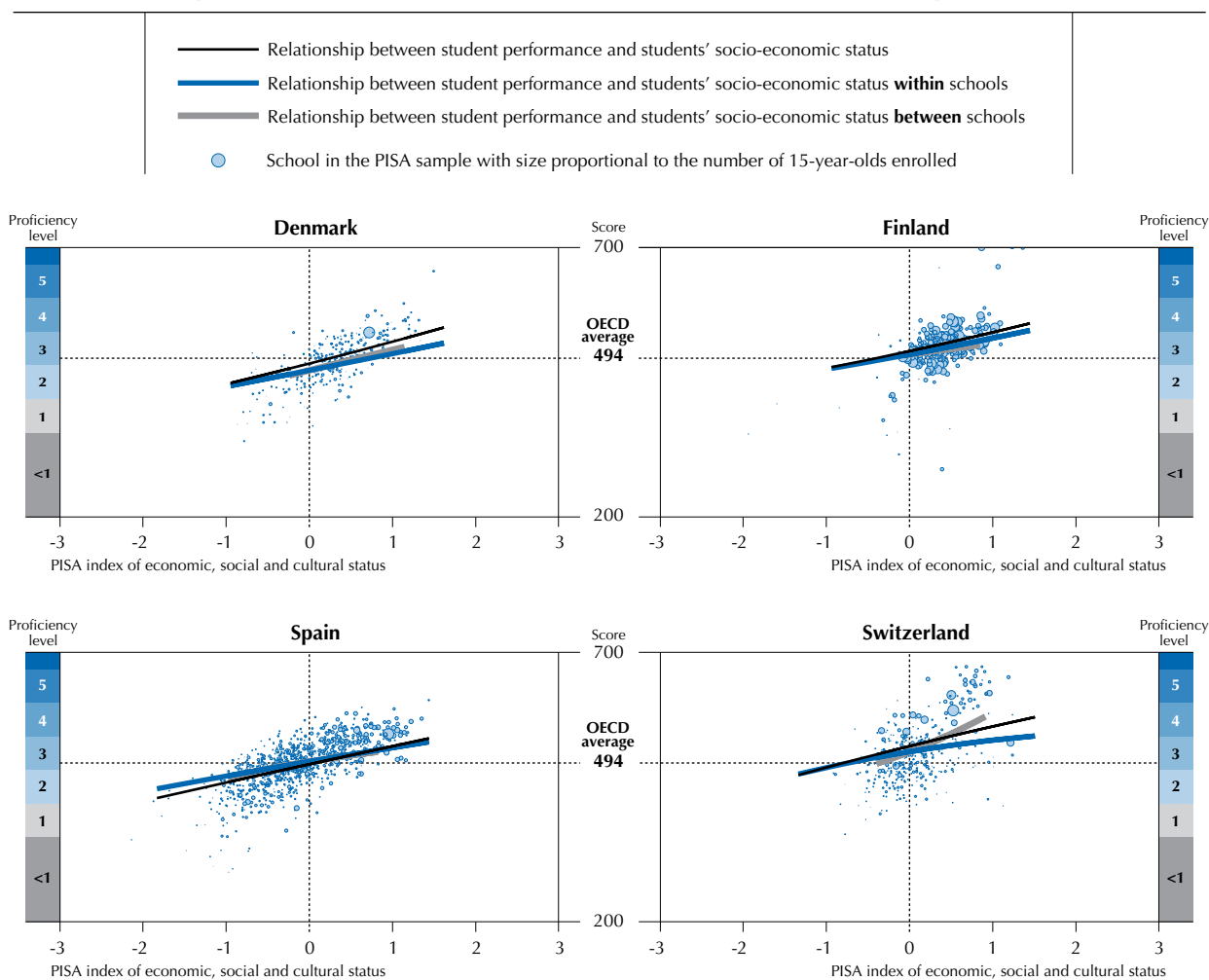
To some extent, school systems that separate students into different schools, based on ability, can expect to have narrower differences in student performance within each school, both overall and relative to socio-economic status. The other side of the coin is that the social disparities between schools account for more of the performance differences among these countries than social disparities within schools. Thus, even Korea, one of the most unequal countries in terms of between-school gradients, and Viet Nam, one of the most equal, show similar results when analysed according to within-school gradients (Figure II.5.12). In no country do within-school social differences account for more than 11% of variation in student performance.

In Denmark, Finland, New Zealand, Poland, Portugal, Spain and Sweden, 9% or more of the performance differences within schools are explained by differences in socio-economic status – a stronger-than-average relationship between performance and socio-economic status within schools. In all these countries, school-level policies, in addition to system-level policies, would prove more effective.

Figure II.5.13 shows the relationship between school performance and schools' socio-economic profile for all OECD countries and partner countries and economies that are not used as examples in previous chapters.

■ Figure II.5.12 ■

Relationship between school performance and schools' socio-economic profile in countries with marked performance differences within schools: Denmark, Finland, Spain and Switzerland



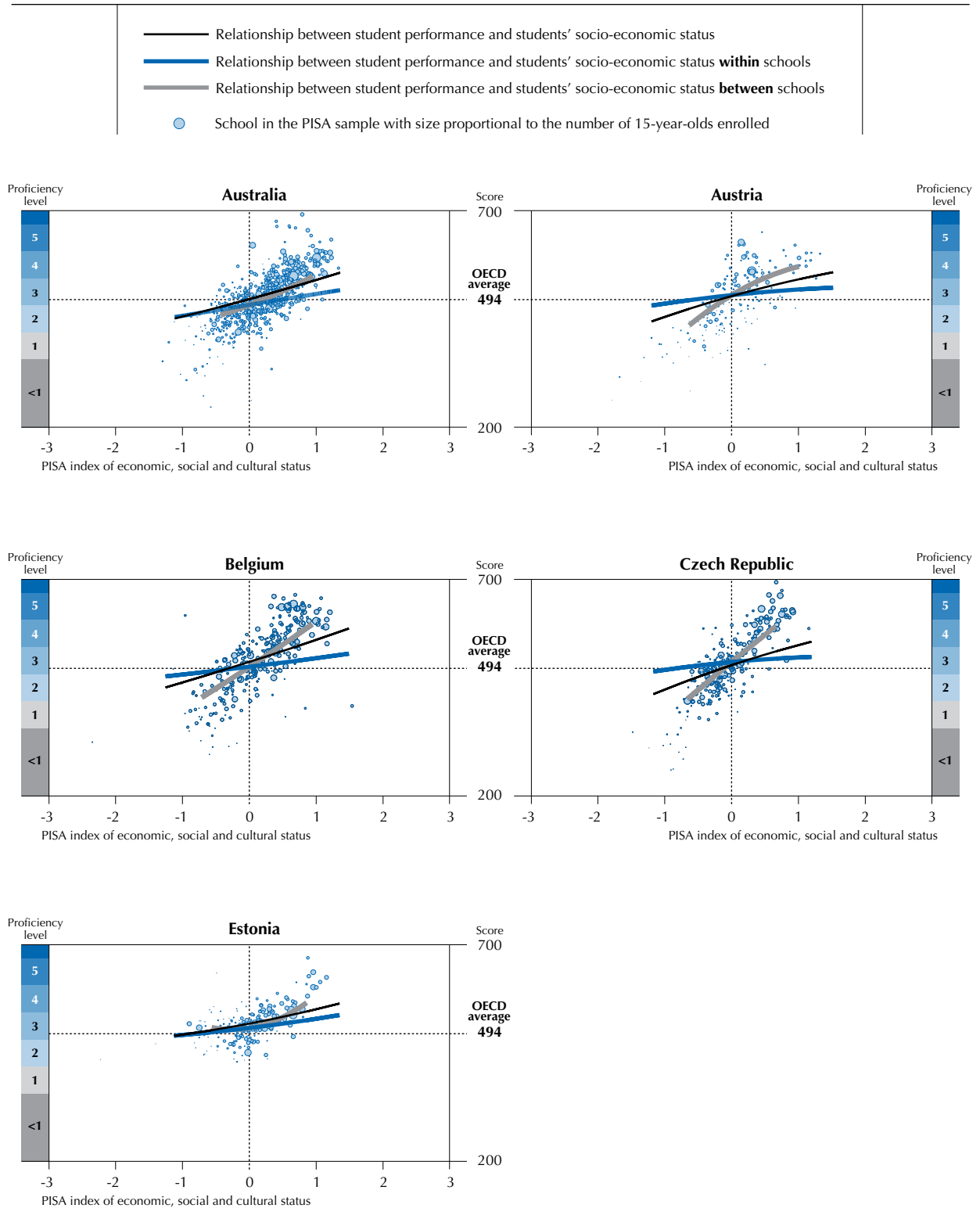
Source: OECD, PISA 2012 Database.

StatLink <http://dx.doi.org/10.1787/888932965174>



■ Figure II.5.13 [Part 1/5] ■

Relationship between school performance and schools' socio-economic profile for all other countries and economies



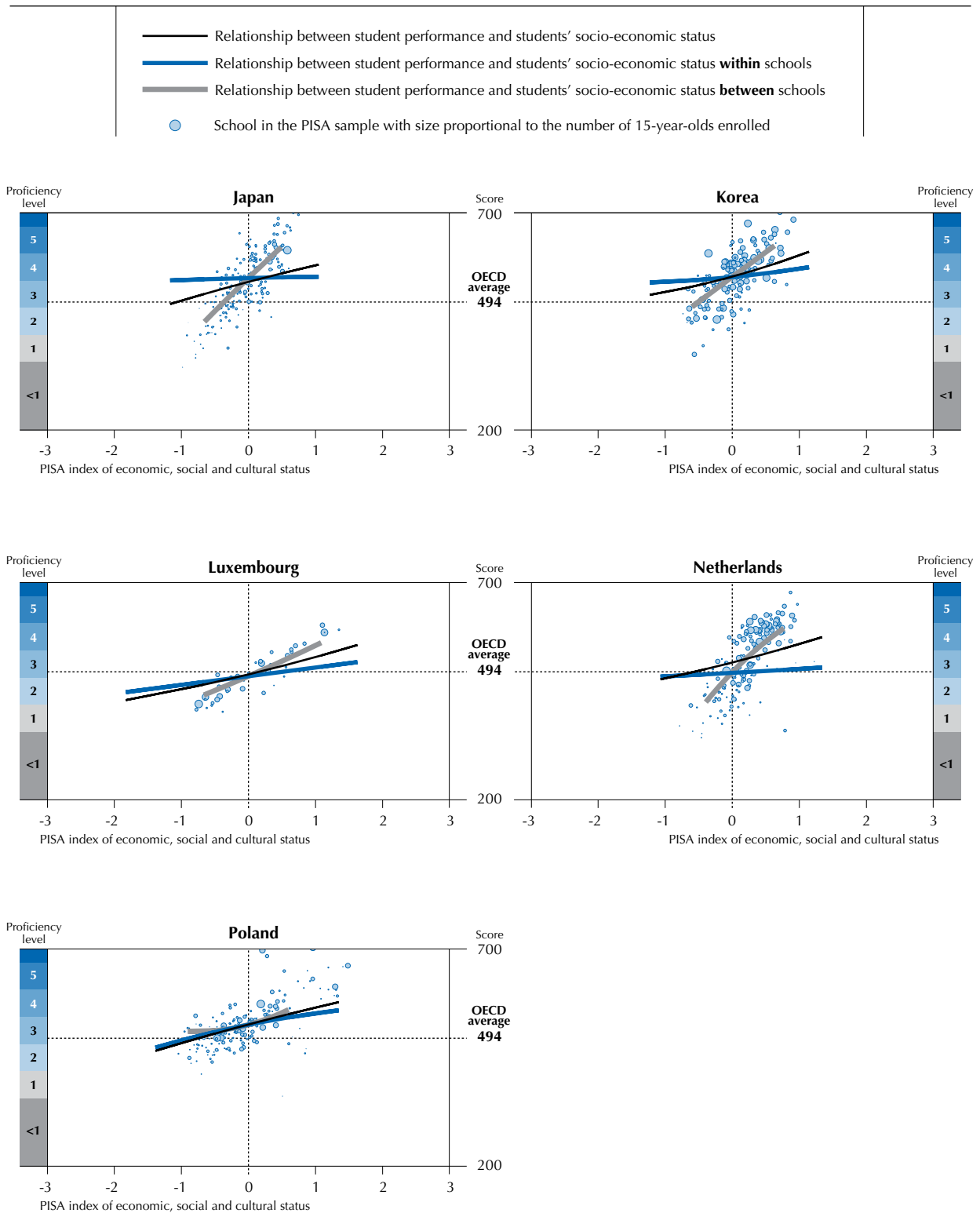
Source: OECD, PISA 2012 Database.

StatLink <http://dx.doi.org/10.1787/888932965193>

StatLink <http://dx.doi.org/10.1787/888932965212>

■ Figure II.5.13 [Part 2/5] ■

Relationship between school performance and schools' socio-economic profile for all other countries and economies



Source: OECD, PISA 2012 Database.

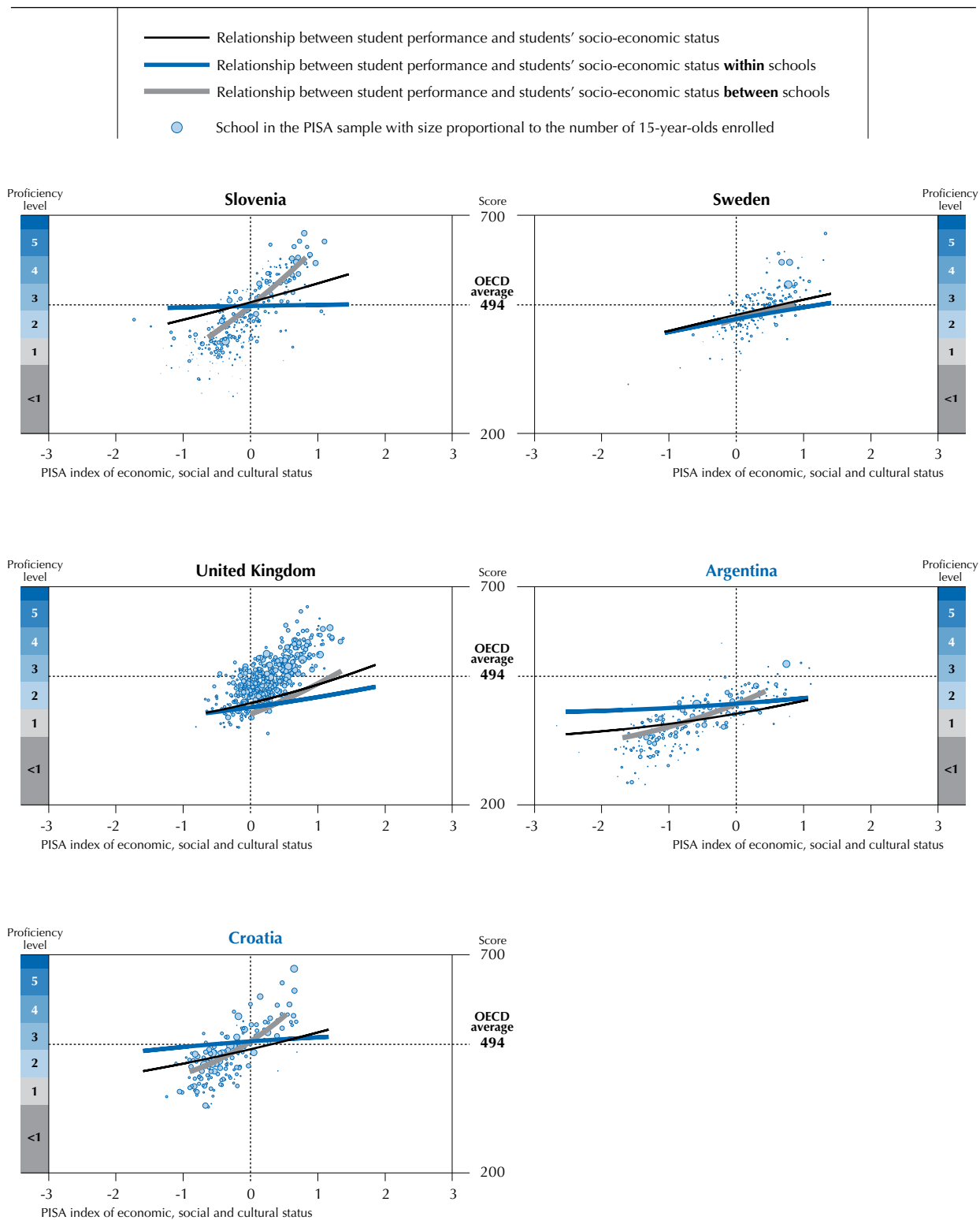
StatLink <http://dx.doi.org/10.1787/888932965193>

StatLink <http://dx.doi.org/10.1787/888932965212>



■ Figure II.5.13 [Part 3/5] ■

Relationship between school performance and schools' socio-economic profile for all other countries and economies



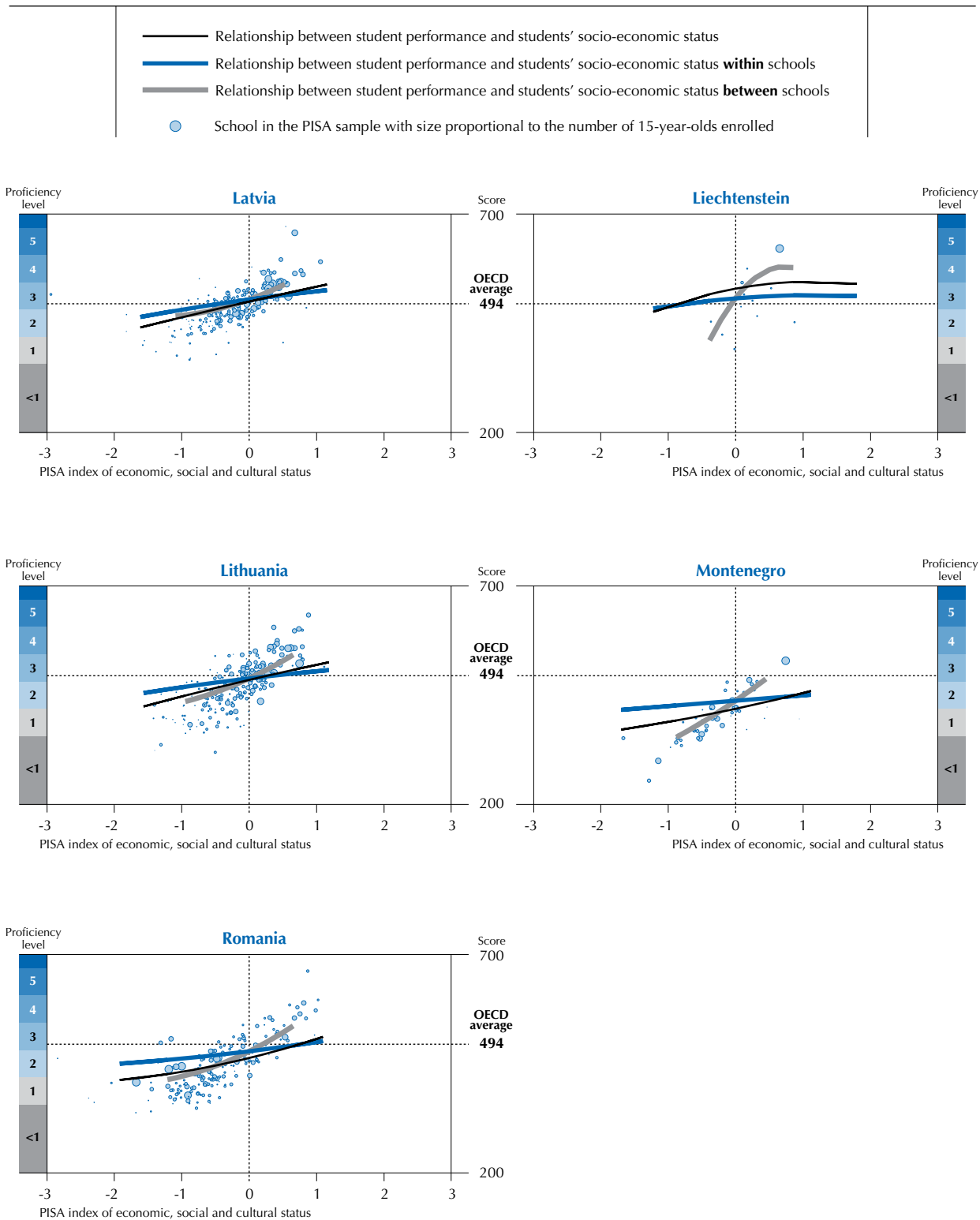
Source: OECD, PISA 2012 Database.

StatLink <http://dx.doi.org/10.1787/888932965193>

StatLink <http://dx.doi.org/10.1787/888932965212>

■ Figure II.5.13 [Part 4/5] ■

Relationship between school performance and schools' socio-economic profile for all other countries and economies



Source: OECD, PISA 2012 Database.

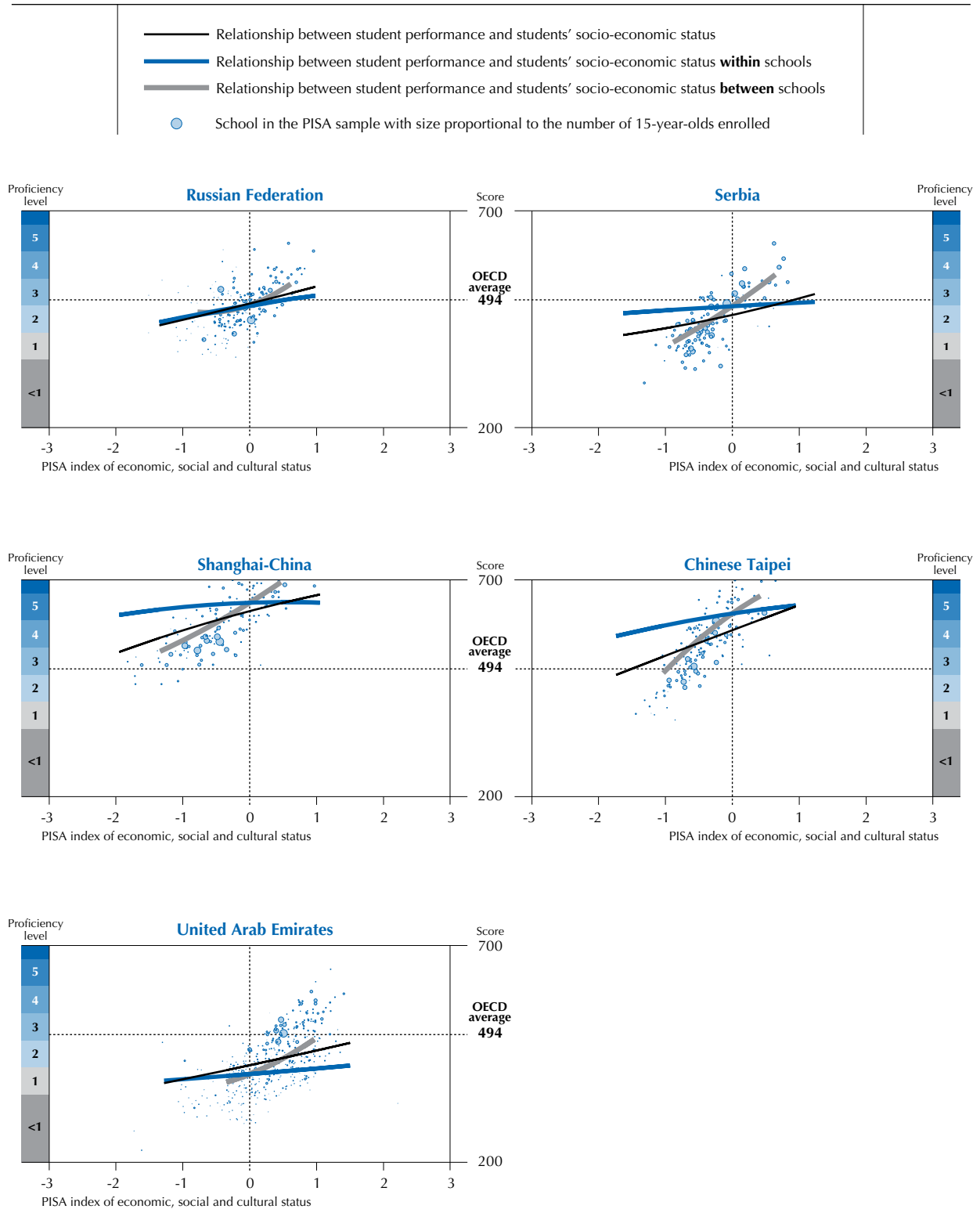
StatLink <http://dx.doi.org/10.1787/888932965193>

StatLink <http://dx.doi.org/10.1787/888932965212>



■ Figure II.5.13 [Part 5/5] ■

Relationship between school performance and schools' socio-economic profile for all other countries and economies



Source: OECD, PISA 2012 Database.

StatLink <http://dx.doi.org/10.1787/888932965193>

StatLink <http://dx.doi.org/10.1787/888932965212>



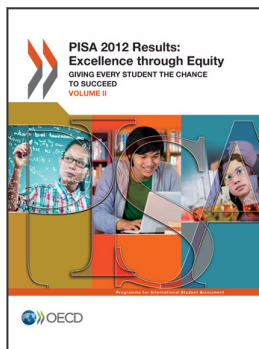
Note

1. Note that these results also depend on how schools are defined and organised within countries/economies and by the units that were chosen for sampling purposes. For example, in some countries, some of the schools in the PISA sample were defined as administrative units (even if they spanned several geographically separate institutions, as in Italy; in others, they were defined as those parts of larger educational institutions that serve 15-year-olds; in still others, they were defined as physical school buildings; and in others they were defined from a management perspective (e.g. entities having a principal). The *PISA 2012 Technical Report* (OECD, forthcoming) provides an overview of how schools were defined. Because of the manner in which students were sampled, the within-school variation includes variation between classes as well as between students. In Slovenia, the primary sampling unit is defined as a group of students who follow the same study programme within a school (an educational track within a school). So in this particular case, the between-school variance is actually the difference between tracks within the schools.

References

OECD (forthcoming), *PISA 2012 Technical Report*, PISA, OECD Publishing.

Willms, J.D. (2006), *Learning Divides: Ten Policy Questions About the Performance and Equity of Schools and Schooling Systems*, UNESCO Institute for Statistics, Montreal.



From:
**PISA 2012 Results: Excellence through Equity
(Volume II)**
Giving Every Student the Chance to Succeed

Access the complete publication at:
<https://doi.org/10.1787/9789264201132-en>

Please cite this chapter as:

OECD (2013), "Policy Implications of Equity in Education", in *PISA 2012 Results: Excellence through Equity (Volume II): Giving Every Student the Chance to Succeed*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264201132-10-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.