

2 Delivering effective and equitable schooling

Introduction

Schools are at the heart of education systems. How they deliver teaching and learning opportunities can contribute to the achievement of not only educational goals, but also broader development goals, such as participatory citizenship, social cohesion and economic competitiveness. Western Balkan economies have enacted important school-level policies to improve the excellence and equity of schooling. These efforts include the introduction of modern, competence-based curricula, the development of comprehensive school evaluation systems, and a shift towards more needs-based resourcing of schools.

Nevertheless, data from PISA and OECD-UNICEF country reviews suggest that several challenges remain in terms of school effectiveness. An important overarching issue is that schooling in the region, in addition to demonstrating relatively lower performance, is not equitable. At the upper-secondary level, students are rigidly tracked and selection into these tracks reflects – and risks exacerbating – inequities at lower educational levels. These inequities develop partly because overall spending in the education sector is low and inefficient compared to international benchmarks, and because schools with more disadvantaged students often receive fewer resources. Against this backdrop, rapid urbanisation is shrinking schools in rural areas creating pressures for more efficient and equitable resource allocation.

This chapter uses PISA data to analyse how schooling in the Western Balkans is both similar to and different from international benchmarks. It focuses strongly on examining how different levels of school inputs, from their student intake to their infrastructure, might be leading to different types of outcomes. Based on these findings, it suggests potential reforms that might help education systems in the region improve learning for all students.

Student tracking

Similar to many OECD countries, Western Balkan education systems track students into general and vocational programmes at the upper-secondary level. However, what distinguishes student tracking in the Western Balkans is the size of vocational sectors and the lack of permeability between educational tracks. As a student's track strongly affects his/her academic and professional opportunities, policy makers must carefully consider how to place students into different tracks and how to help students along their different trajectories. Sorting mechanisms must be reliable and equitable and all students, regardless of what educational track they enter, should be supported to succeed in future learning, work and life.

Data from PISA

Placement into upper-secondary tracks is highly selective

Compared to international benchmarks, Western Balkan systems are much more academically selective when allocating students into educational tracks. For example, some 45% of upper-secondary students from OECD countries attend a school where admission is contingent upon academic performance, compared to 69% of students in the Western Balkans (Table 2.1). In fact, at the upper-secondary level, Western Balkan education systems are some of the most academically selective in the world (Figure 2.1), which increases the need for selection mechanisms to be fair and reliable.





Table 2.1. Criteria for admission into upper-secondary schools

Percentage of students in schools whose principal reported the following:





	Student's record of academic performance is always considered for school admission		Residence in a particular area is always considered for school admission	
	Lower-secondary education	Upper-secondary education	Lower-secondary education	Upper-secondary education
Albania	52	62	43	46
Bosnia and Herzegovina	23	73	69	7
Kosovo	51	92	35	7
Montenegro	49	50	45	17
North Macedonia	c	49	C	6
Serbia	c	85	C	4
Western Balkans average	44	69	48	15
CEEC average	15	74	57	13
EU average	19	51	54	29
OECD average	20	45	50	32

Note: Darker tones indicate greater academic selectivity of the school system.

Student's record of academic performance is always considered for school admission:

-  Less than 20
-  20 to 40
-  40 to 60
-  Greater than 60

Residence in a particular area is always considered for school admission:

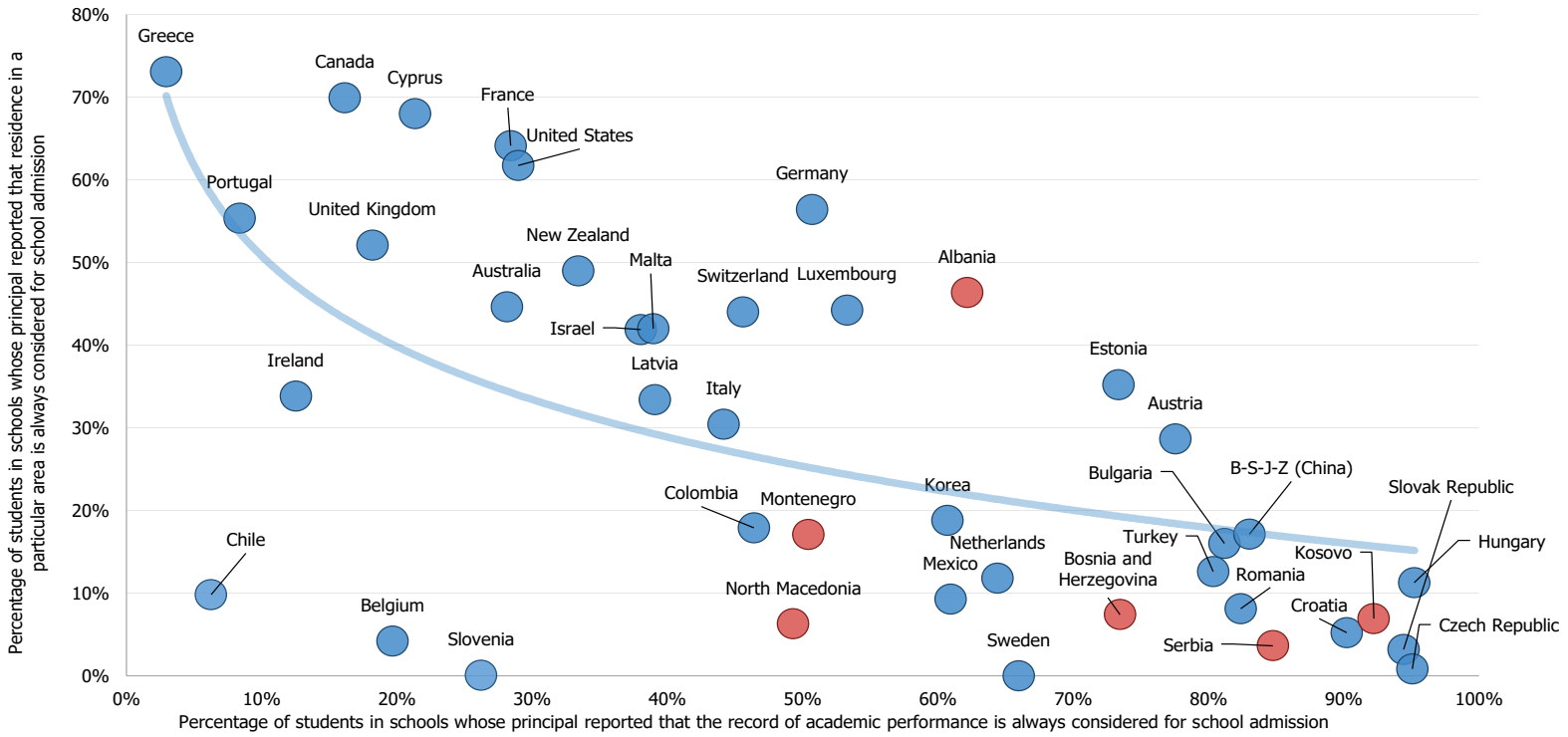
-  Greater than 60
-  40 to 60
-  20 to 40
-  Less than 20

Source: OECD (2019_[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

StatLink  <https://doi.org/10.1787/888934199691>

Figure 2.1. Academic selectivity into upper secondary schools in international education systems

Only students in upper-secondary school



Source: OECD (2019_[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

StatLink  <https://doi.org/10.1787/888934199710>

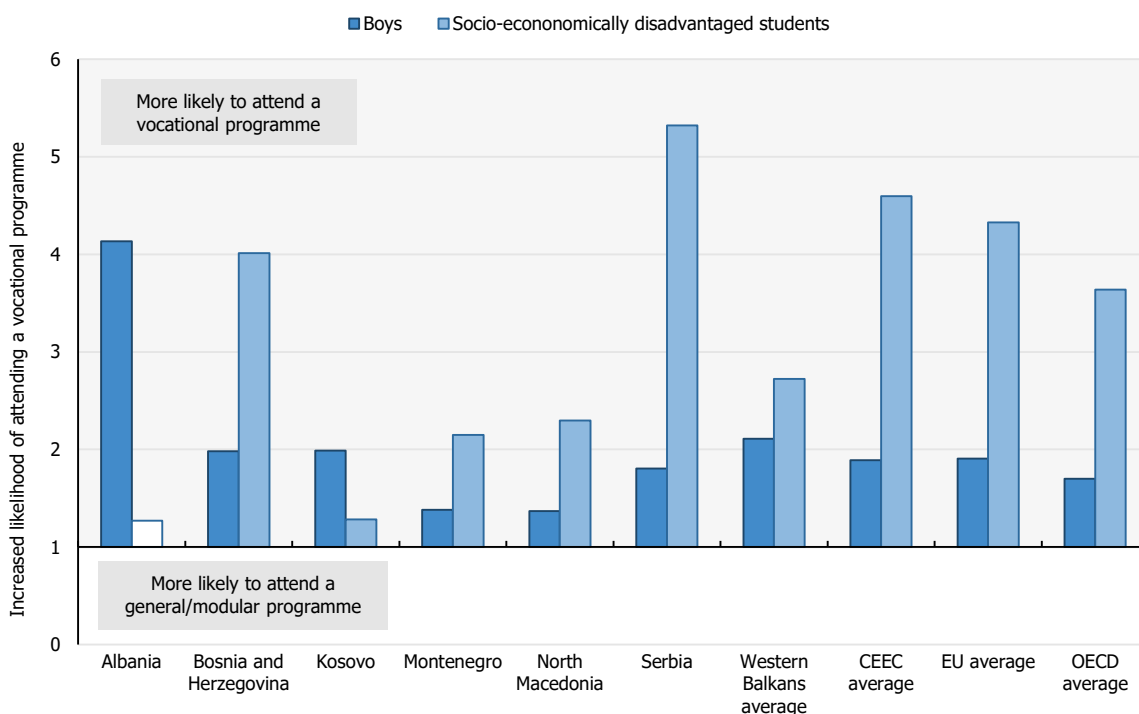
Selection mechanisms in the Western Balkans are not reliable

For highly selective education systems to be equitable, the determinations of student ability that place them into tracks must be valid and reliable. However, data from PISA suggest that assessments of student ability in the Western Balkans might not be accurate and might be largely reflecting student demographics (e.g. their gender and socio-economic background) instead of student capability. This disconnect can then impact the equity of tracking decisions.

For example, on average across Western Balkan systems, students who attend vocational programmes are over twice as likely to be male and almost three times as likely to be socio-economically disadvantaged than students in general education programmes (Figure 2.2). While these results are consistent with the OECD average, there are considerable differences at the system level. In Serbia, socio-economically disadvantaged students are more than five times as likely to attend a vocational upper-secondary school. In Albania, on the other hand, advantaged and disadvantaged students are equally likely to attend vocational upper-secondary school.

Figure 2.2. Increased likelihood of attending a vocational programme according to gender and socio-economic status

Only students in upper-secondary school



Notes: Values that are statistically significant are shaded.

Results based on logistic regression models; one for each variable.

Reference categories are girls and socio-economically non-disadvantaged students.

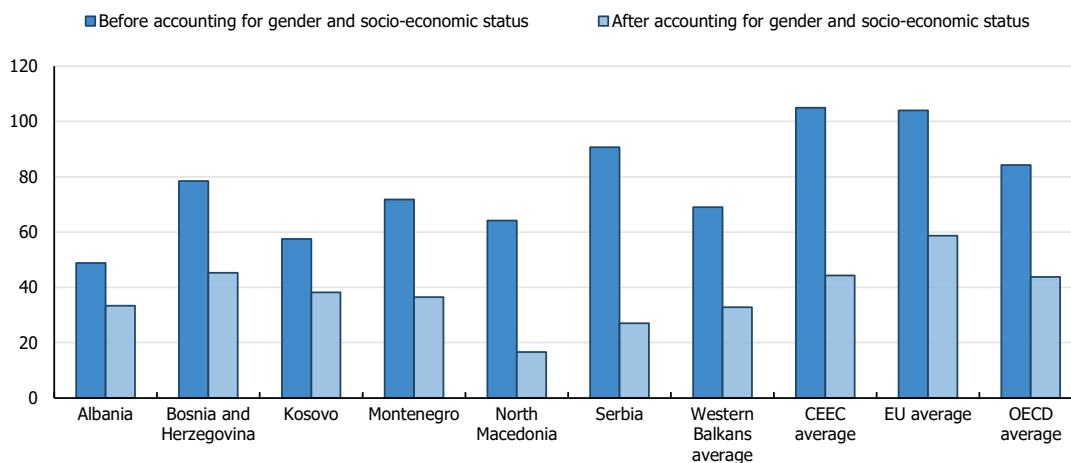
Source: OECD (2019⁽¹⁾). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

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These findings help explain some of the disparities in learning outcomes between tracks that were illustrated in Chapter 1. Since boys and disadvantaged students are also more likely to attend vocational programmes, performance differences between educational tracks expectedly decrease after accounting for these variables (Figure 2.3). The extent to which these variables account for performance differences can indicate how much tracking decisions reflect differences in student ability or student background. In the Western Balkans, this measure differs considerably across systems, suggesting that some tracking mechanisms might be strongly reflecting student background. In Serbia, for example, the average performance difference between tracks drops 64 score points after accounting for gender and socio-economic status, a considerably larger change than the average change across the OECD (40 score points). In North Macedonia, accounting for these variables shrinks performance differences between general and vocational tracks to 17 points, the lowest performance gap in the region and considerably lower than the OECD, EU and CEEC averages.

Figure 2.3. Performance differences between general education and vocational students

Difference in score points in reading before and after controlling for gender and socio-economic status, only students in upper-secondary school



Notes: All differences are statistically significant. Results based on linear regression analyses.

Source: OECD (2019^[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

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Many vocational students do not master core cognitive competences

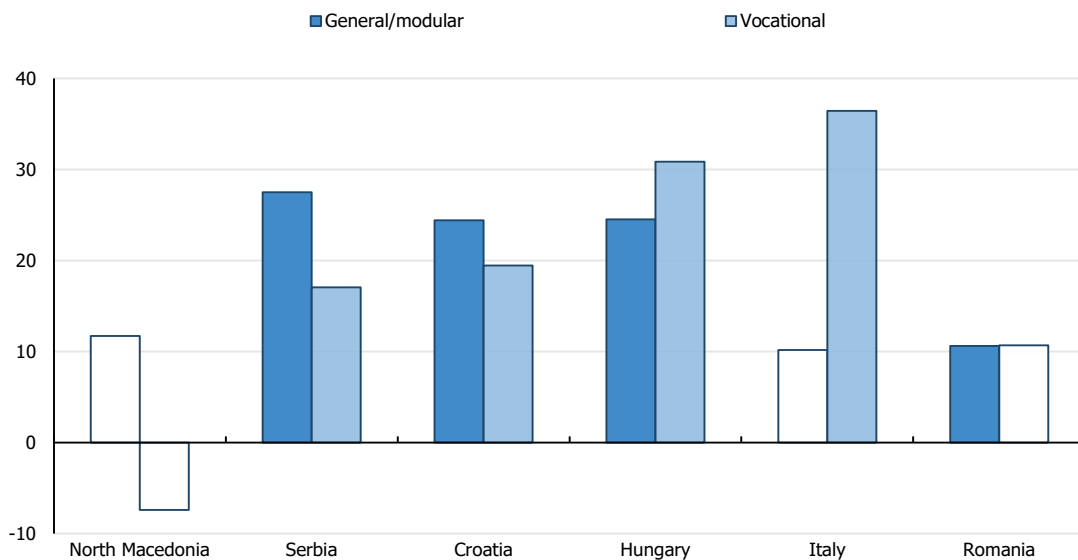
Education systems have a responsibility to ensure that all students, regardless of their educational track, receive quality instruction. Results from PISA indicate that many Western Balkan systems are struggling to equip a large share of students, especially those in vocational programmes, with basic literacy and numeracy skills (see Chapter 1). This disparity is partly because vocational students may face equity challenges in lower level schooling that contribute to weaker foundational skills. However, if vocational programmes do not effectively help students strengthen these important skills, disparities in learning outcomes can actually widen after students are tracked.

Using PISA data, OECD analysts examined the difference in performance between students in different grades in upper-secondary education in vocational programmes compared to general education programmes (i.e. the change observed in one year of schooling in both programmes). In EU countries for which data are available, such as Italy and Hungary, the increase in achievement across grades is actually

greater in vocational tracks, revealing the potential of vocational programmes to address critical learning gaps. In Western Balkan systems with available data, however, students in vocational programmes demonstrate less increased achievement across grades compared to students in general education tracks (Figure 2.4). This widening learning gap is especially problematic in the Western Balkans since students cannot switch programmes or take courses from other tracks once they are selected into their upper-secondary pathways. Unless vocational programmes can effectively develop the competences that students need to be economically competitive, students might not take vocational education seriously, which could further widen learning disparities between tracks and contribute to social and economic issues (Box 2.1).

Figure 2.4. Difference in student performance between students in different grades in general education and vocational programmes

Difference in score points in reading between upper-secondary students in consecutive grades (higher grade students minus lower grade students), after accounting for socio-economic status and gender



Notes: Values that are not statistically insignificant are not shaded.

Only North Macedonia and Serbia are shown because other Western Balkan economies do not have large enough student samples in consecutive grades at the upper-secondary level.

The two consecutive grade levels with the most students were chosen for analysis. In each country, these grade levels were 9 and 10.

Comparison countries are those from the EU who track at the upper-secondary level and have sufficient student sample sizes in consecutive grades at the upper-secondary level.

Source: OECD (2019^[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

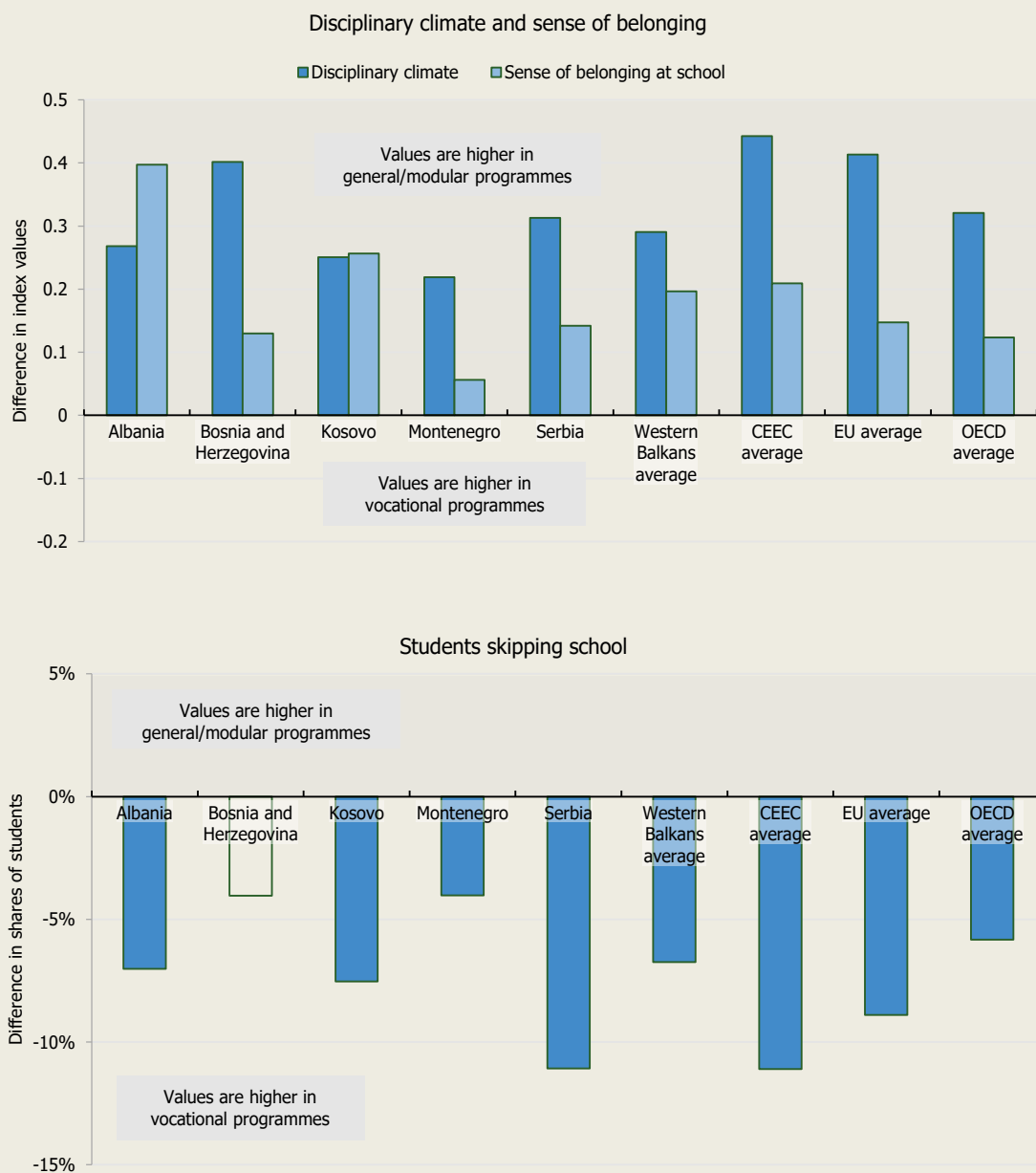
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Box 2.1. Student behaviour in general education and vocational programmes

PISA 2018 asked students questions about their behaviour in school. Answers to these questions were used to create an index of disciplinary climate and an index of sense of belonging at school. These indices are calibrated such that the OECD average is zero, and a value of one represents one standard deviation away from the OECD average. Like international benchmarks, students in the Western

Balkans who are enrolled in general education programmes believe their classmates demonstrate better discipline and feel a greater sense of belonging than students enrolled in vocational programmes, who are also more likely to be truant (Figure 2.5).

Figure 2.5. Student behaviour in general education and vocational programmes



Note: Values that are not statistically insignificant are not shaded.

Source: OECD (2019^[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

StatLink  <https://doi.org/10.1787/888934199786>

Several factors might explain these findings. One is that vocational students, who are more likely to have lower performance and be boys, are also more likely to demonstrate associated behaviours, such as being less disciplined and skipping school. Another is that vocational students recognise that they have been placed in what is perceived to be a “lesser” track and thus take their schooling less seriously. These results are troubling because they could lead to disengagement, dropout and unemployment, especially among boys, which OECD-UNICEF reviews have noted are issues in the region.

Policy implications

Improving student assessment can make tracking decisions more equitable

Tracking students equitably requires having a shared understanding of what students should know and be able to do at a certain point in their education, and reliably assessing them against that shared understanding. To better communicate learning expectations, many Western Balkan economies have introduced modern, system-wide learning standards. However, there is generally limited understanding about how to assess student performance against these standards and how to support students to achieve them (Maghnouj, S., 2020^[2]; Maghnouj, S., 2020^[3]; OECD, 2019^[4]). As a result, judgements about student performance (and potential) are sometimes subject to bias and inconsistencies, which can compound inequities that often start in earlier years of schooling and contribute to inequitable tracking outcomes.

Several Western Balkan economies have undertaken efforts to develop teachers’ assessment capacity. North Macedonia, for example, introduced a Formative Assessment Manual. In Serbia, teachers administer mandatory diagnostic tests at the beginning of each school year to develop a baseline for evaluating individual student progress (OECD, 2019^[4]; Maghnouj, S., 2020^[3]). These types of formative assessments, or assessments *for* learning, can help teachers identify more reliably and support struggling students (OECD, 2013^[5]). Another way that many education systems, including a growing number in the Western Balkans, support teachers’ assessment literacy is through the use of national assessments. These are centrally developed, standardised tests that do not have consequences for students but can serve as models for teachers to develop their own standards-based assessments and help teachers moderate their classroom grading.

To improve the fairness of the tracking decision itself, most Western Balkan economies administer examinations to inform selection into upper-secondary schools. Unlike national assessments, exams do carry consequences for students but, if reliable, can provide a less subjective, external measure of student learning so tracking decisions are not determined solely by teacher judgements. North Macedonia, which has very narrow performance gaps between general education and vocational students when student background is accounted for (and large disparities when background is unaccounted for) is the only system in the region with neither a national assessment nor a lower-secondary examination (Table 2.2). This example highlights the risk that tracking decisions made solely based on teacher judgement without external moderation might reflect student background more than ability.

Table 2.2. External assessments and examinations in the Western Balkans

Grades when national assessments and examinations are administered

	National assessment (grades)	National examination (levels after which the examination is administered)	
		Lower-secondary	Upper-secondary
Albania	5	X	X
Bosnia and Herzegovina	Varies	Varies	Varies
Kosovo		X	X
Montenegro		X	X
North Macedonia	Under development	-	X
Serbia	Under development	X	X

Notes: Serbia's current examination at the end of upper-secondary education is school-based, meaning it is developed, administered and marked in each school and is thus not standardised across the system. A centralised examination is planned to be introduced in 2020.

Bosnia and Herzegovina's policies differ according to internal education systems.

While vocational curricula preparation should focus on occupational skills, research shows that core academic skills, such as functional literacy and numeracy, are also important for students to succeed in the workplace and adjust to accelerated changes in the world of work. Successful vocational programmes, therefore, develop students' core cognitive skills alongside occupational skills. Findings from OECD-UNICEF policy reviews in the Western Balkans, however, indicate that vocational curricula might focus too much on foundational skills from a theoretical perspective as opposed to a practical one (Maghnouj, S., 2020^[3]; OECD, 2019^[4]). Data from PISA further highlight the considerable need for vocational programmes to help students develop fundamental competences, especially in the Western Balkans where large shares of students have not achieved basic literacy and numeracy skills by age 15.

Ensuring that all upper-secondary students, including those in vocational tracks, develop foundational skills requires a range of policy measures that motivate students to learn, from introducing flexibility between pathways to providing career guidance and access to tertiary education (OECD, 2010^[6]). Another policy area that requires particular attention is examinations, which can help drive teaching and learning, signal skills to employers through certification and create diverse opportunities so students do not perceive vocational education to be a "dead end" (Figure 2.6) (OECD, 2013^[5]).

Most Western Balkan economies already have well-established upper-secondary exams, commonly known as maturas, which include a set of mandatory subjects that are taken by both general education and vocational students (Table 2.2). By allowing all students to enter tertiary education, maturas help raise the value of vocational programmes. More can be done, however, especially regarding recognising students' vocational abilities in addition to their academic ones (Box 2.2).

Box 2.2. Strengthening the value of vocational education

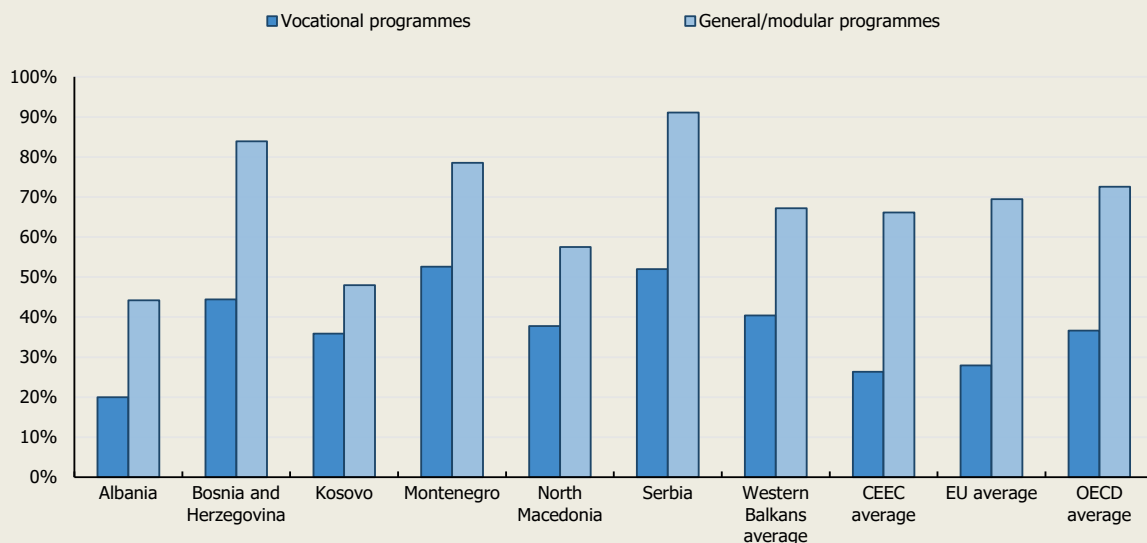
Internationally, students and parents sometimes consider vocational education to be a less prestigious track, which can discourage vocational students from taking their schooling seriously and undermine national economic goals. PISA 2018 findings suggest this might be an issue in the Western Balkans, as almost half of vocational students in the region expect to complete a four year bachelor's degree (Figure 2.6). On one hand, this finding reflects a positive feature of Western Balkan education systems, that vocational students are not deterred from pursuing academic tertiary studies. However, it may also reflect a belief that vocational programmes do not adequately prepare students to secure a good job.

Making vocational education valuable is a challenge in many countries. One way of enhancing the attractiveness and rigour of vocational education is conferring a certification that is equivalent to students from general education programmes, and which allows for entry into university. Also important is ensuring that students are certified for their vocational skills, which would give them a competitive advantage compared to individuals who do not hold such a certification. In Germany and Switzerland, this type of external recognition is conferred through students' examination results (and validated by chambers of industry) in specific vocational subjects.

Currently, almost all vocational and general education students in the Western Balkans receive the same upper-secondary certification. However, there is no externally validated certification of specific vocational competences, which might make it more challenging for vocational students to find meaningful employment and make the vocational track seem less attractive.

Figure 2.6. Differences in expectations between students who attend general education and vocational programmes

Percentage of upper-secondary students who expect to complete a university degree



Notes: A university degree includes a Bachelor's, Master's or Doctoral degree (ISCED 5A and 6).

All differences are statistically significant.

Source: OECD (2019^[11]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

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School resourcing

On average across the Western Balkans, education spending as a percentage of gross domestic product (GDP) is much smaller than that of OECD and EU countries (Table 2.3). As a result, education systems in the region face a range of resource concerns from school buildings in need of major repairs (maintenance) to deficient technological infrastructure that impedes computer-based assessment (OECD, 2019^[4]; World Bank, 2019^[7]). Within this context, it is even more important for education systems to allocate resources in ways that best support high quality teaching and learning for all students.

Table 2.3. Education system funding

Economy	Education funding (all levels) as percentage of GDP (year)
Albania	4.0 (2016)
Bosnia and Herzegovina	Data not available
Kosovo	4.7 (2014)
Montenegro	Around 4.0% (2017)
North Macedonia	3.7 (2016)
Serbia	4.0 (2015)
CEEC average	4.5% (2016)
EU average	5.0% (2016)
OECD average	5.4 (2016)

Sources: Kosovo Ministry of Education (2016^[8]). Kosovo Education Strategic Plan 2017-2021.

http://www.kryeministri-ks.net/repository/docs/KOSOVO_EDUCATION_STRATEGIC_PLAN.pdf (accessed 20 March 2020).

International Monetary Fund (2017^[9]). Montenegro: Selected Issues. <https://www.imf.org/-/media/Files/Publications/CR/2017/cr17277.ashx> (accessed 17 November 2020).

UNESCO-UIS (n.d.^[10]). Government expenditure on education as a percentage of GDP. <http://data.uis.unesco.org/#> (accessed 20 March 2020).

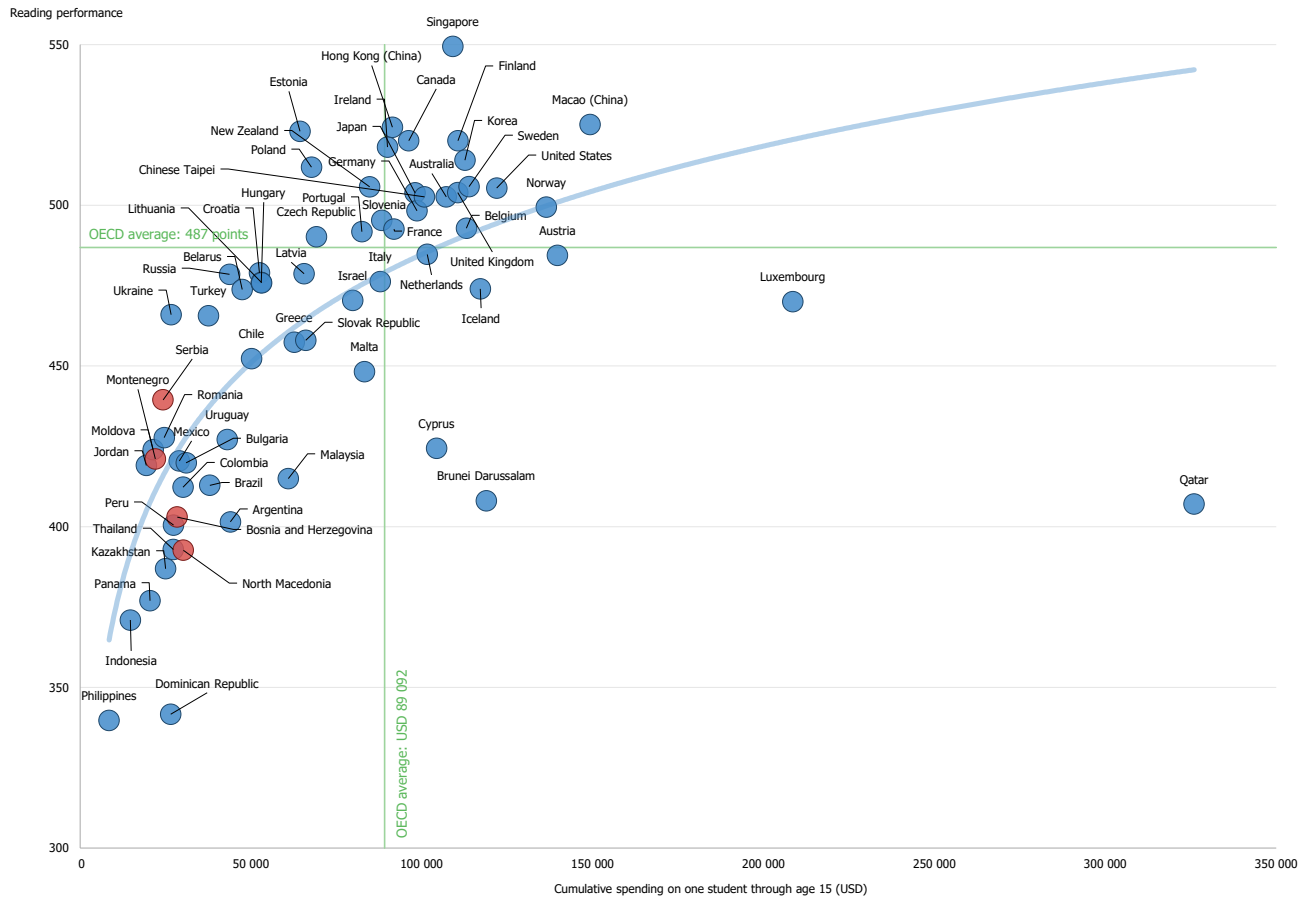
Data from PISA

Overall educational resourcing is lower in the Western Balkans

PISA 2018 asks education systems to provide system-level data about educational expenditure. On average across the four Western Balkan economies for which data were available, spending on the education of a single student through age 15 was roughly 26 000 USD, considerably less than the OECD average of around 89 000 per student.

Figure 2.7 shows the relationship between cumulative per student spending through age 15 vis-à-vis mean performance on the PISA reading test. The picture for the Western Balkans is mixed. Serbia and Montenegro perform higher than would be expected, while Bosnia and Herzegovina and North Macedonia perform lower than would be expected given their level of spending. These findings suggest that while the overall level of funding of an education system matters, the design of its education policies (i.e. the efficiency of spending) can also affect learning outcomes.

Figure 2.7. Cumulative spending through age 15 and relationship with performance



Source: OECD (2019_[11]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020). Tables I.B1.4 and B3.1.1.

StatLink  <https://doi.org/10.1787/888934029128>

To better understand school resourcing, PISA 2018 asked school principals to indicate whether a shortage or inadequacy of key educational resources hindered instruction at their schools. These key resources are defined here as:

- physical infrastructure (e.g. school buildings, heating and cooling systems, and instructional space)
- educational materials (e.g. textbooks, laboratory equipment, instructional material and computers)
- human resources (i.e. teachers and teaching assistants).

Table 2.4 shows how principals in the Western Balkans responded to questions about these resources compared to principals from other education systems. On average, principals from the Western Balkans are slightly more likely to report that inadequate material resources (defined by PISA as both educational materials and physical infrastructure) hinders instruction at their schools. Principals from Bosnia and Herzegovina and Kosovo are considerably more likely to report issues with material resources.

In terms of human resources, there is very little variation across Western Balkan economies. This finding is in line with other PISA data showing that distributions of certified teachers and those with master's degrees (proxies for teacher quality) in the Western Balkans are similar across schools, regardless of differences in curricula programmes or student populations. While these results suggest that the allocation of educational staff is not a major concern for the region at the systems level, there are noticeable disparities in instructional practices among different types of schools, highlighting a need for policies to go beyond focusing on teacher certification and qualification levels to more closely examine differences in teaching practices across schools. Chapter 3 studies these issues in greater detail.






Table 2.4. Principals' perceptions of key educational resources

Percentage of students in schools whose principal reported that the school's capacity to provide instruction was hindered a lot by:

	Material resources			
	A lack of educational material	Inadequate or poor quality educational material	A lack of physical infrastructure	Inadequate or poor quality physical infrastructure
Albania	8	5	7	6
Bosnia and Herzegovina	18	16	13	13
Kosovo	33	22	18	15
Montenegro	5	3	5	7
North Macedonia	16	7	8	8
Serbia	5	3	6	8
Western Balkans average	14	9	9	10
CEEC average	4	4	9	9
EU average	4	4	9	10
OECD average	5	4	9	9

	Human resources			
	A lack of teaching staff	Inadequate or poorly qualified teaching staff	A lack of assisting staff	Inadequate or poorly qualified assisting staff
Albania	1	1	3	2
Bosnia and Herzegovina	0	0	2	0
Kosovo	2	3	7	3
Montenegro	0	0	2	0
North Macedonia	1	1	5	0
Serbia	0	0	4	0
Western Balkans average	1	1	4	1
CEEC average	3	1	6	1
EU average	4	1	9	3
OECD average	4	1	8	3

Note: Darker tones indicate greater reported lack of resources.

-  Less than 5
-  5 to 10
-  10 to 15
-  15 to 20
-  Greater than 20

Source: OECD (2019^[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

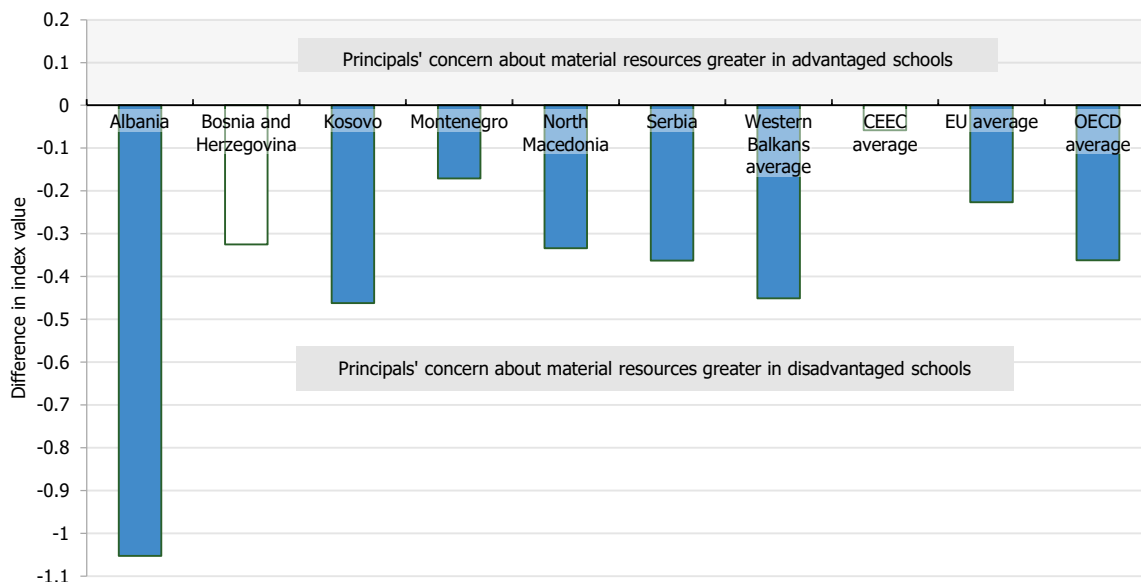
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Educational resourcing in the Western Balkans is inequitable

In addition to the overall level of resource provision, it is important to consider whether resources are going to where they are most needed. Across OECD countries, material resources are not allocated equitably across schools. In general, advantaged schools are likely to be better resourced than disadvantaged schools¹, as are general education schools compared to vocational schools. Figure 2.8 and Figure 2.9 show that these trends are also true in Western Balkan education systems; however, there are large differences at the system level. For example, principals of disadvantaged schools in Albania are much more likely to report shortages in material resources than principals who work in similar schools located in

other Western Balkan economies. In terms of disparities across educational programmes, principals of vocational schools in Bosnia and Herzegovina are much more likely than vocational principals in other regional economies to report concerns about material resources.

Figure 2.8. Principals' perceptions of material resources in advantaged and disadvantaged schools



Note: Values that are statistically significant are shaded.

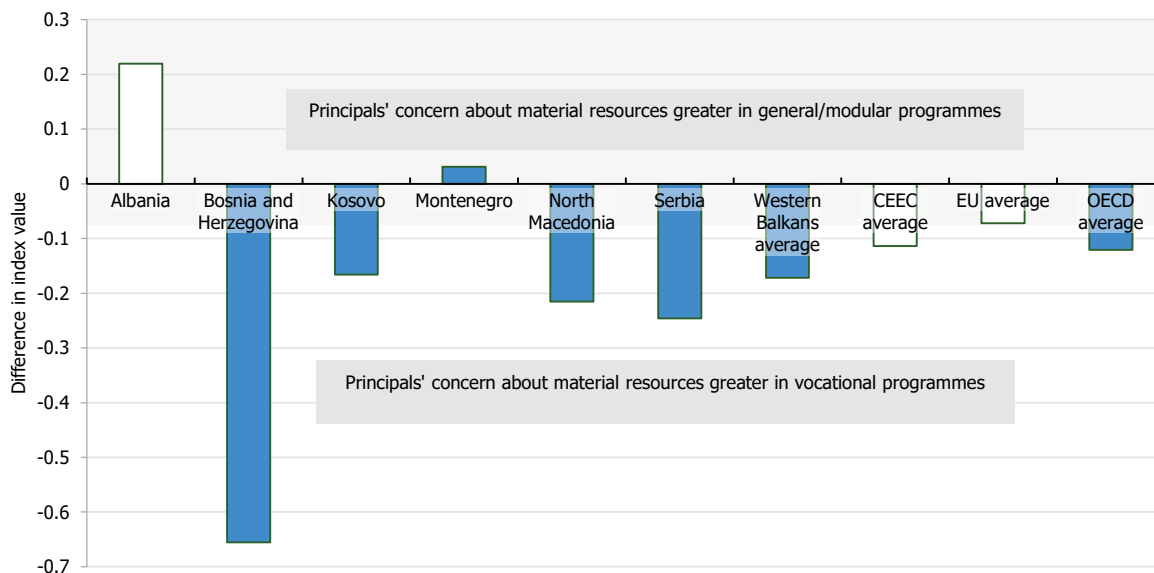
Answers to questions in Table 2.4 were used to create an index of concern about material resources. This index is calibrated such that the OECD average is zero, and a value of one represents one standard deviation away from the OECD average.

Source: OECD (2019₍₁₎). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

StatLink  <https://doi.org/10.1787/888934199843>

Figure 2.9. Principals' perceptions of material resources in general and vocational schools

Only principals from upper-secondary schools



Note: Values that are statistically significant are shaded.

Answers to questions in Table 2.4 were used to create an index of concern about material resources. This index is calibrated such that the OECD average is zero, and a value of one represents one standard deviation away from the OECD average.

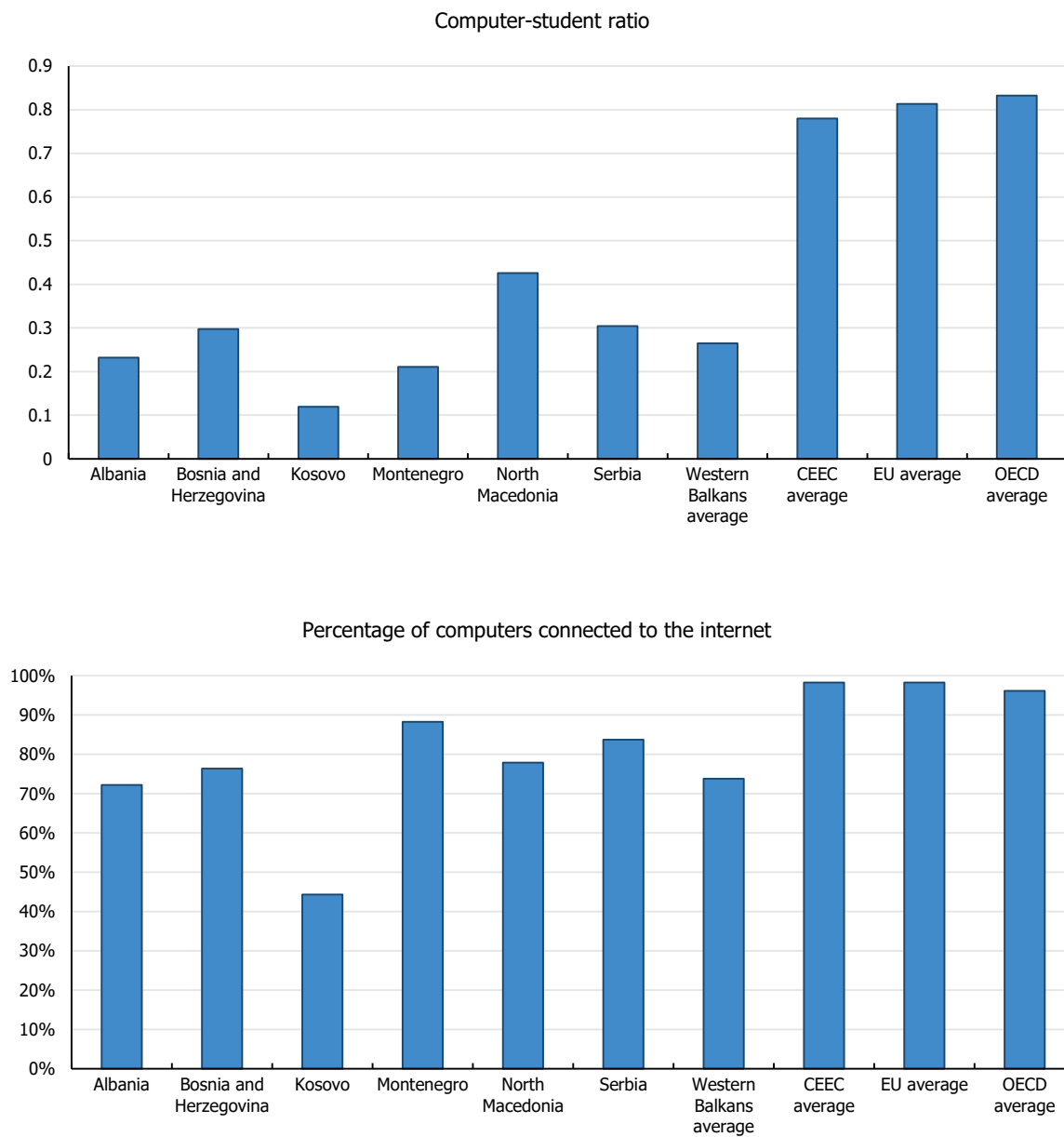
Source: OECD (2019_[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

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Similar to other types of material resources, technological infrastructure, and perceptions of its adequacy, is not allocated equitably across Western Balkan schools. The availability of technological infrastructure is crucial to modern education systems as it indicates the quality and relevance of educational provision in the digital age. Technology also enables distance learning when schools are not able to operate normally, such as recently during the school closures prompted by the COVID-19 pandemic.

As part of the PISA 2018 school questionnaire on educational materials, principals were asked a series of questions about their schools' technological infrastructure. Figure 2.10 and Table 2.5 show that schools in the region tend to have poorer technological infrastructure and, when these resources are available, they are often perceived as less sufficient. Figure 2.11 and Table 2.6 show that available technological resources are not distributed equitably. Advantaged schools tend to have more computers, a larger share of computers connected to the internet, and principals from advantaged schools are more likely to report having sufficient technological resources compared to principals from disadvantaged schools.

Figure 2.10. Technological infrastructure



Source: OECD (2019^[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).






StatLink  <https://doi.org/10.1787888934199881>

Table 2.5. Principals' perceptions of technological infrastructure

Percentage of students in schools whose principal agreed or strongly agreed with the following statements:

	An effective online learning support platform is available	The number of digital devices for instruction is sufficient	The availability of adequate software is sufficient	Teachers have the necessary technical and pedagogical skills to integrate digital devices in instruction
Albania	32	38	47	89
Bosnia and Herzegovina	34	38	35	67
Kosovo	22	15	17	72
Montenegro	49	40	57	76
North Macedonia	24	38	44	79
Serbia	40	43	49	71
Western Balkans average	34	35	41	76
CEEC average	52	61	71	73
EU average	52	59	72	65
OECD average	54	59	71	65

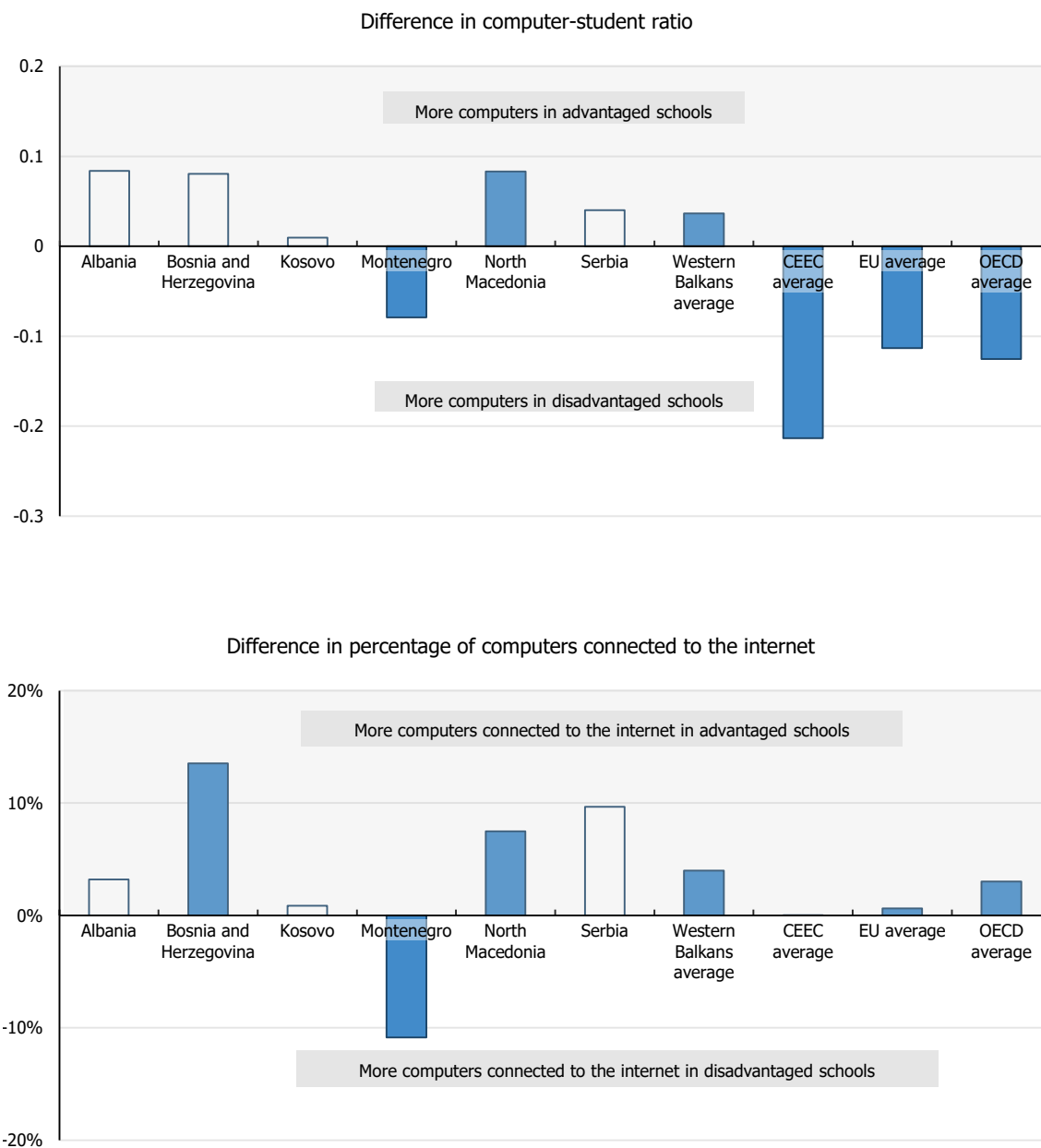
Note: Darker tones indicate greater agreement.

-  Less than 25
-  25 to 50
-  50 to 60
-  60 to 70
-  Greater than 70

Source: OECD (2019[1]). PISA 2018 Database: <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

StatLink  <https://doi.org/10.1787/888934199900>

Figure 2.11. Technological infrastructure in advantaged and disadvantaged schools



Note: Values that are statistically significant are shaded.

Source: OECD (2019_[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

StatLink  <https://doi.org/10.1787/888934199919>

Table 2.6. Principals' perceptions of technological infrastructure in advantaged and disadvantaged schools

Difference in the percentage of students in schools (advantaged minus disadvantaged) whose principal agreed or strongly agreed with the following statements:

	An effective online learning support platform is available	The number of digital devices for instruction is sufficient	The availability of adequate software is sufficient	Teachers have the necessary technical and pedagogical skills to integrate digital devices in instruction
Albania	33	47	45	5
Bosnia and Herzegovina	19	10	10	-10
Kosovo	14	2	-12	11
Montenegro	-29	12	3	-9
North Macedonia	9	21	49	-22
Serbia	20	10	19	4
Western Balkans average	11	17	19	-3
CEEC average	0	1	3	1
EU average	8	5	9	6
OECD average	10	11	11	7

■ Higher capacity in socio-economically advantaged schools
 ■ Higher capacity in socio-economically disadvantaged schools

Source: OECD (2019^[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

StatLink  <https://doi.org/10.1787/888934199938>

Digital resource shortages, both real and perceived, are not necessarily related to student performance

Concerns about inadequate resourcing are typically connected with the belief that greater resourcing can produce stronger student outcomes. However, while schools and teachers undoubtedly need proper resources to educate students, simply providing resources is not enough to improve student learning. Those resources also need to be relevant to schools' needs and school staff need to have the capacity to use those resources. If these conditions are not met, then more resources will not necessarily lead to better outcomes and countries risk inefficiently investing limited educational funds.

According to data from PISA 2018, the relationship between more resourcing and better outcomes is not conclusive. This trend is true internationally and across Western Balkan economies. For instance, North Macedonia has the highest computer-to-student ratio in the region, likely owing to a recent initiative to provide one laptop per child (OECD, 2019^[4]). However, there is no relationship in North Macedonia between the number of computers and student outcomes (Table 2.7). These findings further suggest that it is how resources are used, not just their availability, that helps determine whether they support student learning.

Table 2.7. School resources and reading performance

Association between reading performance and the following variables

	Shortage of material resources	Number of available computers per student for educational purposes	Percentage of computers connected to the Internet
Albania			
Bosnia and Herzegovina			
Kosovo			
Montenegro			
North Macedonia			
Serbia			
Western Balkans average			
CEEC average			
EU average			
OECD average			

Percentage of students in schools whose principal agreed or strongly agreed that:

	The number of digital devices for instruction is sufficient	The availability of adequate software is sufficient	Teachers have the necessary technical and pedagogical skills to integrate digital devices in instruction	An effective online learning support platform is available
Albania				
Bosnia and Herzegovina				
Kosovo				
Montenegro				
North Macedonia				
Serbia				
Western Balkans average				
CEEC average				
EU average				
OECD average				

Note: Results based on linear regression models, after accounting for the students' and schools' socio-economic status.

Positive association

Negative association

Source: OECD (2019^[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).StatLink  <https://doi.org/10.1787/888934199957>**Policy implications***Adequate funding and re-distributive policies can enable more equitable allocations of educational resources*

In order to direct resources to where they can make the greatest difference, many OECD and EU countries use a combination of allocation mechanisms that aim to address the needs of schools with the most marginalised population groups (e.g. students with disabilities and from disadvantaged backgrounds). These mechanisms typically take the form of additional funding provided to particular schools (e.g. by including weights based upon student characteristics in a funding formula) or through targeted programmes (e.g. grants), which are provided for specific purposes but are separate from main allocations

(OECD, 2017^[11]). In the Western Balkans, some education systems have already started exploring similar approaches. Serbia, for example, has tried to develop a per-capita funding formula; however, implementation remains a challenge (Maghnouj, S., 2020^[3]). Albania is providing grants to certain groups of students to cover costs of transportation to school and textbooks (UNICEF, 2017^[12]). These types of re-distributive policies can help Western Balkan economies use their limited educational resources more equitably and efficiently.

Strengthening school evaluation can help identify and address the needs of individual schools

Ensuring effective resourcing requires first accurately identifying the strengths and weaknesses of schools. In this regard, school evaluation frameworks are crucial because they generate data about school needs that can help direct necessary resources and support. Similar to most OECD and EU countries, several Western Balkan economies have already developed school evaluation frameworks. Traditionally, these frameworks typically evaluated schools according to their compliance with rules and procedures but increasingly focus on how schools help students learn (OECD, 2013^[5]). Serbia, for instance, has created a school evaluation framework with a set of school quality standards that emphasise teaching and learning practices and outcomes (Maghnouj, S., 2020^[3]).

Successfully conducting school evaluations is difficult. An important aspect is whether the assessment of a school's needs is accurate and focuses on effective practice. Regional systems have adopted several strategies to improve their assessment of school needs. For example, Serbia introduced new school quality standards in 2012, which were further revised in 2018 following initial testing to focus more on effective practice. North Macedonia is overhauling its school evaluation framework so it focuses less on compliance, more on student learning, and strengthens the importance of self-evaluation so principals can exercise more instructional leadership (OECD, 2019^[4]). Education systems can use this information to design more effective school improvement policies. In Serbia, school evaluation results have been used to facilitate peer-learning across high and low performing schools.

Building school leadership capacity can help schools use resources more effectively

Adequate resourcing will not necessarily produce the desired outcomes if school staff do not have the capacity to use those resources to help students learn. Central in this effort are school leaders, who are responsible for directing teaching and learning at their schools and overseeing how resources are used (Pont, Nusche and Moorman, 2008^[13]). To ensure that principals are prepared to fulfil their important functions, many countries select principals based on their ability to help schools improve student learning, as opposed to their political affiliations or experience in other professions, and require that they undergo extensive training.

Most school principals in the Western Balkans were former teachers, which is positive because it ensures principals are familiar with the school environment. However, OECD-UNICEF policy reviews have found that school principals in the region tend to view their role as administrative rather than as instructional leaders responsible for planning and driving school improvement. Moreover, the profession is often characterised by political interference in hiring processes and limited training opportunities. These factors contribute to creating cadres of school leaders that are not always well equipped to improve teaching and learning at their schools.

Several Western Balkan economies have started addressing these issues by making principal appointments more transparent and offering more substantial and relevant preparation for principals. For example, in 2017 Albania established a School of Directors as a centre for educational leadership (Maghnouj, S., 2020^[2]); and in North Macedonia, prospective principals must pass a certification and licensing examination that assesses computer skills, theoretical knowledge and includes a presentation of a seminar paper (OECD, 2019^[4]). These initiatives offer promising examples for how other systems in the

region can strengthen the instructional and managerial capacity needed for school leaders to manage schools and use resources effectively and efficiently.

School networks

Many OECD and European school systems are experiencing significant demographic shifts, which, along with other social and economic changes, is altering the landscape of school networks². Specifically, birth rates are declining and rural communities are shrinking while urban populations grow. Western Balkan economies are grappling with similar challenges. Birth rates have declined since 2000, especially in Kosovo and Albania. There has also been extensive migration outflows and internal mobility from rural to more urban areas as families and individuals search for better work and educational opportunities (Table 2.8). These factors create challenges for regional development and the provision of public services, especially in the education sector. In particular, the overall number of students is decreasing in rural schools, creating unsustainable excess capacity, while schools located in cities are becoming overcrowded and struggling to accommodate increased demand (OECD, 2018^[14]; Maghnouj, S., 2020^[2]; Maghnouj, S., 2020^[3]; OECD, 2019^[4]).

Demographic pressures are even more consequential in Western Balkan education systems because several economies in the region already have extended networks of small schools catering to students with different linguistic backgrounds (see Chapter 1). Governance arrangements in some parts of the region also lead to significant issues in terms of the jurisdiction, responsibility and co-ordination of education policy. These circumstances can make it difficult for education authorities in the Western Balkans to provide high quality and equitable teaching and learning opportunities across territorial spaces and linguistic groups.

Table 2.8. Changes in demographic indicators from 2000 to 2018

Value in 2018 minus value in 2000

	Birth rate (per 1,000 people)	Urban population as a percentage of total population
Albania	-4.6	18.6
Bosnia and Herzegovina	-2.9	5.9
Kosovo	-6.8	Data not available
Montenegro	-2.0	8.3
North Macedonia	-2.2	-0.6
Serbia	-0.6	3.3
EU average	-1.0	3.7
OECD average	-2.3	4.9

Source: World Bank (2020^[15]). Fertility rate, total (births per woman). <https://data.worldbank.org/indicator/SP.DYN.TFRT.IN> (accessed 17 November 2020).

Data from PISA

School sizes vary widely both across and within Western Balkan education systems

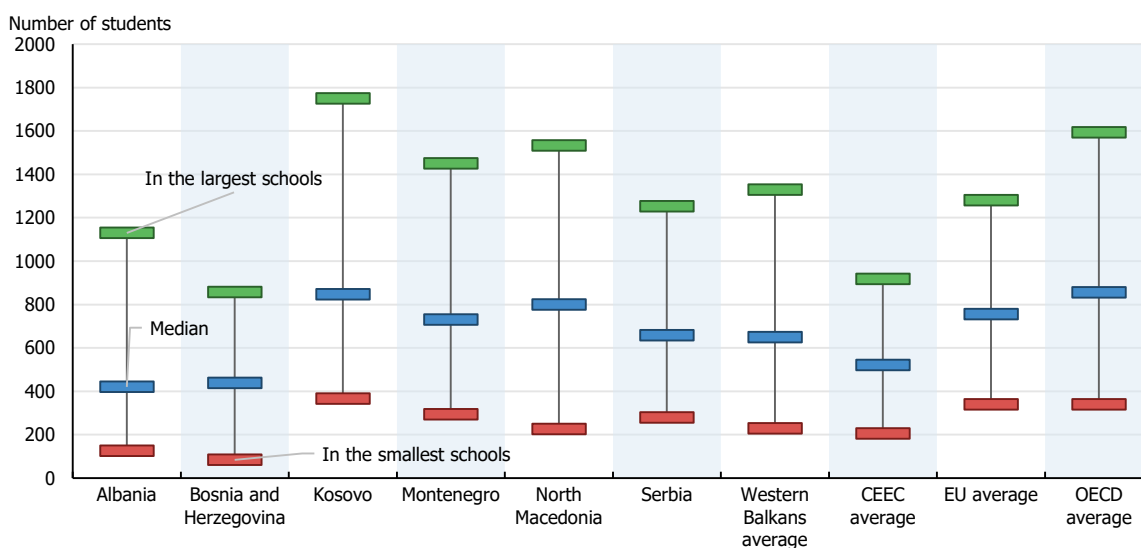
Overall, data from PISA reveal that 15 year-old students in the Western Balkans attend schools that are similar in size to schools internationally. However, large deviations are observed at the system level (Figure 2.12). Albania and Bosnia and Herzegovina, for example, have especially large numbers of very small schools. The smallest 10% of upper-secondary schools in Bosnia and Herzegovina have fewer than

84 students, much lower than the smallest upper-secondary schools across the OECD, which have fewer than 339 students. On the other hand, the largest 10% of upper-secondary schools in Kosovo have over 1 750 students, substantially larger than the largest schools across EU countries (1281). Nevertheless, the smallest 10% of schools in Kosovo are similar in size to the smallest schools in the EU, suggesting that Kosovo has a very wide range of school sizes.

The disparity in school size implies diverse challenges for school networks. Small schools are often under resourced and less cost effective, but may stay open in order to provide access to compulsory education for students living in remote areas or, in some cases, to ensure that different linguistic have access to instruction in their mother tongues. On the other hand, while larger urban schools can benefit from economies of scale, staff in these schools may have less time to dedicate to each student and schools in these contexts often serve students from heterogeneous backgrounds, presenting challenges for individualised instruction and classroom management.

Figure 2.12. School size across the Western Balkans

Only students in upper-secondary school



Note: Largest and smallest schools are defined as the top and bottom 10% of schools in terms of student enrolment. Schools are weighted by the number of 15-year-old students enrolled.

Source: OECD (2019₍₁₎). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).

StatLink  <https://doi.org/10.1787/888934199976>

Low student-teacher ratios affect school network efficiency

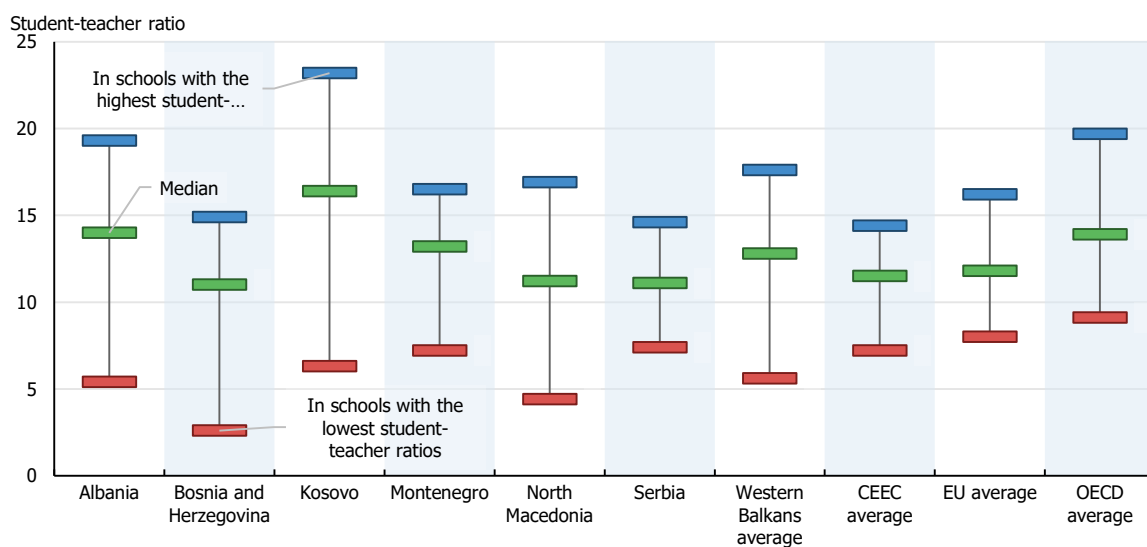
Partly owing to the large number of small schools, data from PISA reveals that student-teacher ratios in the Western Balkans have a much wider range than international averages. The difference between schools with the highest 10% and lowest 10% of student-teacher ratios in the Western Balkans is 12 students, compared with roughly eight students across EU countries. There are also notable variations within individual economies. Schools with the lowest 10% of student-teacher ratios in Bosnia and Herzegovina have fewer than three students per teacher, while the lowest 10% of schools in North Macedonia have fewer than five students per teacher. Both figures are substantially lower than the lowest 10% of OECD schools, which have fewer than nine students per teacher. When considering non-teaching

staff, some of these schools in Bosnia and Herzegovina and North Macedonia could actually have more staff than students.

Data from PISA, however, suggest that neither smaller school sizes nor lower student-teacher ratios are related to improvements in learning outcomes. In fact, they are sometimes associated with lower student outcomes, which is likely related to the fact that small schools are more likely to be located in more rural areas, which tend to be poorer and face other disadvantages (Figure 2.13). Considering the high fixed costs of teacher salaries and the inconclusive evidence about staff size and student performance, maintaining large numbers of teachers in shrinking schools represents a major concern in the region. This situation is especially problematic given that Western Balkan education systems already face low levels of overall funding.

Figure 2.13. Student-teacher ratios

Only students in upper-secondary school



Note: Schools with the highest and lowest ratios are defined as the top and bottom 10% of schools in terms of student-teacher ratios. Schools are weighted by the number of 15-year-old students enrolled.

Source: OECD (2019^[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).


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
Table 2.9. Relationship between school network characteristics and student performance in reading

After accounting for student socio-economic status

	Smaller school size	Smaller student-teacher ratio
Albania		
Bosnia and Herzegovina		
Kosovo		
Montenegro		
North Macedonia		
Serbia		

Note: Results based on linear regression models, after accounting for the students' and schools' socio-economic status.

 Negative relationship

 No relationship
Source: OECD (2019^[1]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 November 2020).StatLink  <https://doi.org/10.1787/888934200014>

Policy implications

Rationalising school networks and classrooms can improve the efficiency and effectiveness of educational provision

A critical consideration for education authorities in the Western Balkans is how to provide quality teaching and learning opportunities across geographic areas and sub-sectors (e.g. schools that instruct in different languages) of the system. There are several ways to enhance the efficiency of school networks and a common approach used by several OECD and EU economies is consolidation. This method involves closing some schools and transferring their students to another site, which can increase school size but make education provision more efficient and effective (OECD, 2018^[14]). Since some Western Balkan education systems allocate funding based on structural inputs (e.g. the number of classes within a school), there are limited financial incentives for schools to consolidate, as schools with larger classes would not necessarily receive additional funding. Devising school funding formulas based upon student enrolment, and in consideration of different student needs, which is occurring in Serbia and Albania, can help encourage consolidation where it is possible. Also helpful is demonstrating to parents and communities the benefits for students in accessing larger, better resourced schools.

In some rural communities and ethnic communities consolidation will be difficult to implement because students would then live too far away from a suitable school. In these and other situations, Western Balkan education systems have devised different means to increase the cost effectiveness of school systems. For example, Serbia and Albania operate satellite schools, whereby a central school runs a cluster of other schools to pool administrative and staff costs (Maghnouj, S., 2020^[2]; Maghnouj, S., 2020^[3]). In Bosnia and Herzegovina - which has some of the smallest schools in the region – some education authorities make use of multi-grade schooling. This practice involves students from different grade levels sharing the same classroom and teacher at the same time, which eliminates the need to have two teachers teaching very small classes. While similar practices can be found in other developing education systems and even OECD and EU countries, the effects of such approaches are highly dependent on the preparation and support teachers receive when working in these challenging circumstances (OECD, 2018^[14]).

In the case of larger schools located in urban areas with high population density, schools sometimes operate in double or even triple shifts to accommodate a greater number of students. Kosovo and North Macedonia, which have some of the largest schools in the region, make use of multi-shift schedules. While

this approach allows for highly efficient use of school facilities, it is important to consider the effects multi-shift schooling can have on the quality and time of instruction, as it could lead to more stressful learning environments, shorter break periods and increases in out-of-school class work (OECD, 2018^[14]).

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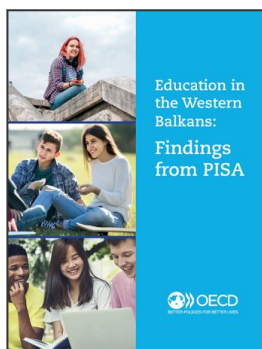
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Notes

¹ A socio-economically disadvantaged (advantaged) school is a school in the bottom (top) quarter of the index of ESCS in the relevant country/economy.

² School networks refer to the location, size and offer of educational facilities in an education system.



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