
SERBIA EDUCATION PUBLIC EXPENDITURE REVIEW

Overall Sector Financing Note

2022



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The findings, interpretations, and conclusions expressed herein are those of the authors alone. They do not necessarily reflect the views of UNICEF or the Board of Executive Directors of the World Bank or the Governments they represent.

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ABBREVIATIONS

AP	autonomous province
CPD	continuous professional development
ECA	Europe and Central Asia
ECEC	early childhood education and care
EU	European Union
EUA	European University Association
EUR	euros
FTE	full-time equivalent
GDP	gross domestic product
HEI	higher education institution
ICT	information and communication technology
INSET	in-service education and training
ISCED	International Standard Classification for Education
LFES	Law on Foundations of Education System
LSG	local self-government
MICS	Multiple Indicator Cluster Survey
MoESTD	Ministry of Education, Science, and Technological Development
OECD	Organisation for Economic Co-operation and Development
PER	public expenditure review
PISA	Programme for International Student Assessment
R&D	research and development
RSD	Serbian dinars
SES	socioeconomic status
SORS	Statistical Office of the Republic of Serbia
TALIS	Teaching and Learning International Study
TIMSS	Trends in International Mathematics and Science Study
UIS	UNESCO Institute for Statistics
UMI	upper middle income
UN	United Nations
VET	vocational education and training
WASH	water, sanitation and hygiene
WDI	World Development Indicators

INTRODUCTION

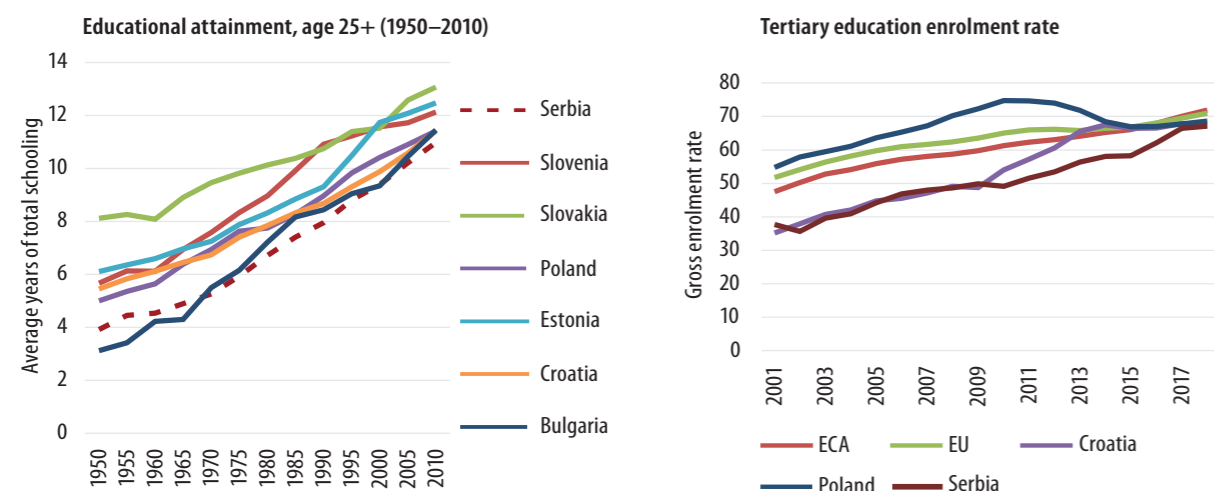
The Serbia Education Public Expenditure Review (PER) is comprised of four notes: (i) the overall sector note (this one), plus more detailed notes on (ii) higher education, (iii) preschool education, and (iv) in-service teacher training. This note summarizes key findings and analyses from the other notes.

The analysis presented here and in the other notes is conducted jointly by the World Bank and UNICEF. It is based on data received from Serbia's Ministry of Education, Science and Technological Development (MoESTD), the Institute for Improvement of Education (IIE), the Institute for Education Quality and Evaluation (IEQE), and the Statistical Office of the Republic of Serbia (SORS). Additionally, data at the local level of government is based on Treasury Administration data from the payment system for 2017, as well as a sample of data from 27 local self-governments (LSG) in the period 2017–2018, representing more than 60 per cent of total expenditures on education executed at the local level of government. The analysis also relies on other sources of data, such as international databases like Education Finance Watch, UNESCO Institute of Statistics and Eurostat; international student assessment surveys including PISA, TIMSS, and TALIS; and secondary research. The World Bank and UNICEF teams are thankful to MoESTD and other agencies for providing data for the analysis.

SETTING THE STAGE: PROGRESS AND TRENDS SHAPING EDUCATION

Serbia has seen concerted improvements in educational attainment and human capital over the last years. The average years of total schooling for the population aged 25 and above has increased steadily, and Serbia is converging with other countries in the region, including other small transition economies of Europe that have entered the European Union (EU) (see Figure 1). According to the World Bank's Human Capital Index, Serbia's level of human capital has increased from 2010 to 2020, reflecting increases both in expected years of schooling as well as quality of learning. Serbia now ranks higher than average for the Europe and Central Asia (ECA) region, and higher than the average for other upper-middle-income (UMI) countries. This indicates that both the quantity and quality of education in Serbia continue to improve.

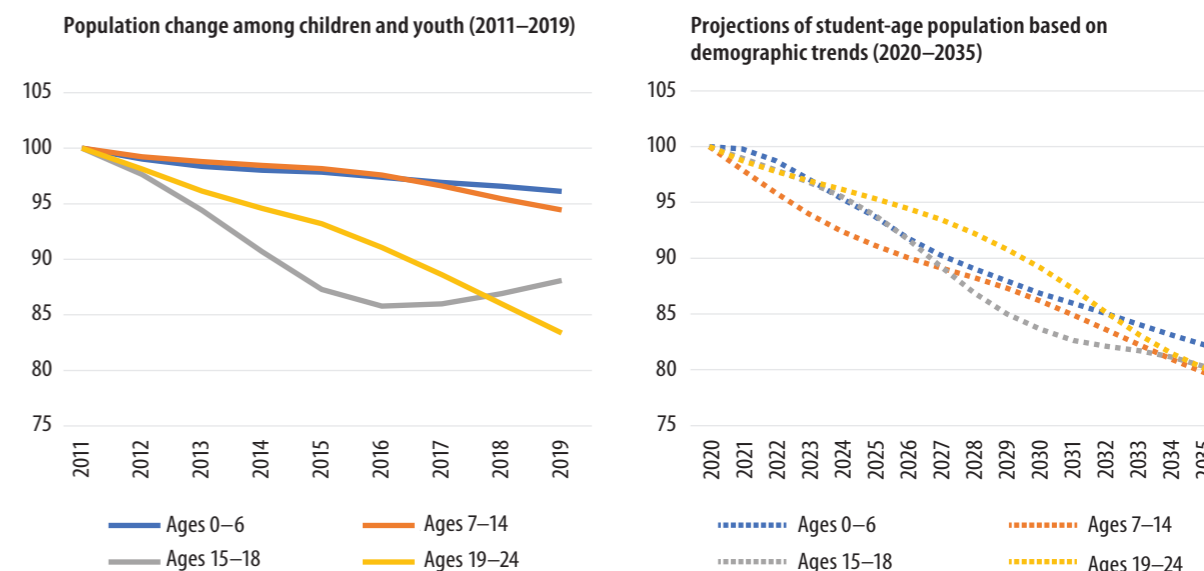
Figure 1. Educational attainment and tertiary enrolment



Source: Barro & Lee (2018); World Development Indicators (WDI)

Despite these trends, the overall population is declining, meaning that Serbia's stock of human capital will continue to erode unless efforts are taken to improve quality and relevance of education while ensuring that no one is left behind. The child and youth population in Serbia has been declining for some time, in line with overall demographic trends in the country. However, the children and youth population has been declining at different rates depending on the age group. The young population aged 15–24 has declined by about 15 per cent since 2011, whereas the younger age groups of 0–6 and 7–14 – equivalent to pre-primary and primary education – has also declined but by 4 per cent and 6 per cent, respectively (see Figure 2). These trends are projected to continue into the future. Continued development of Serbia's human capital, in the face of ongoing demographic decline, will require careful management and deployment of resources to raise learning levels for all students.

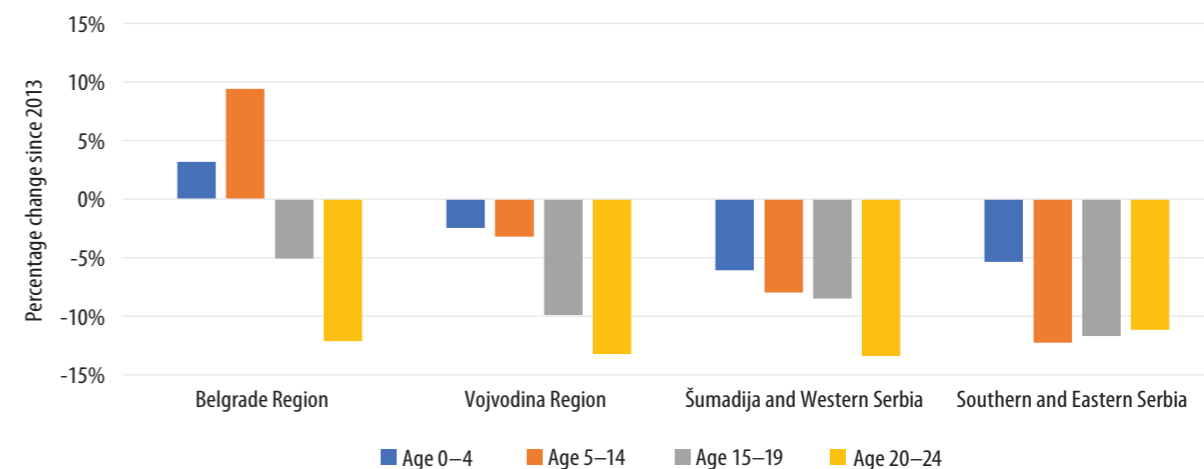
Figure 2. Demographic trends among school-age population in Serbia



Source: Statistical Office, medium variant population trends; UN Population

However, there is significant regional variation in demographic trends, with school-age populations in the Belgrade region continuing to increase. There has been a significantly larger decrease in the children and youth population in Šumadija and Western Serbia and in Southern and Eastern Serbia in general (see Figure 3). According to the Statistical Office, in the Belgrade Region, the population under age 14 has actually increased by over 6 per cent since 2013, reflecting growing urbanization and internal migration in the country. This represents an important structural factor affecting both the changes in utilization of resources and the disproportionate resource needs going forward.

Figure 3. Population change by age cohort and region (2013–2019)

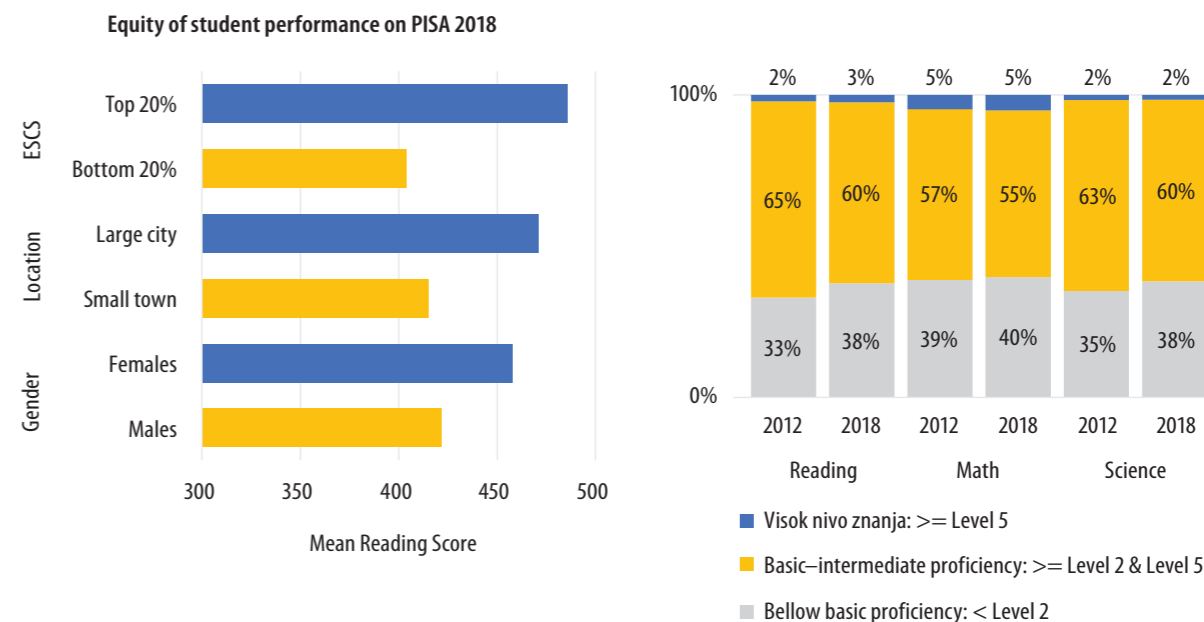


Source: Statistical Office

While demographic decline is leading to declining enrolments in general, there are shifts in enrolment patterns, with a significant increase in enrolment at the preschool level. The absolute number of enrolled children in preschool education has increased by nearly 20 per cent since 2013, reflecting both the relatively lower starting point and lower initial enrolment rates in preschool education, as well as the Government's efforts to expand access. Enrolment rates in early childhood education (36–59 months) have increased from 50 per cent in 2014 to 61 per cent as of 2019, according to MICS. Primary and secondary education net attendance rates remain high at 99 per cent for primary education and 94 per cent for secondary education. However, primary and secondary education enrolments have been steadily decreasing in absolute terms, with a decline of about 8 per cent in enrolments since 2013 according to data from the Statistical Office. At the tertiary education level, the absolute number of enrolled students was increasing until about 2016 but has declined since then. However, the gross enrolment rate in tertiary education continues to increase, from 56 per cent in 2013 to 68 per cent as of 2019, according to the World Bank's World Development Indicators. These enrolment trends demonstrate the changing demand for education in Serbia and the possible need for reallocation of resources across levels of education.

Despite progress achieved, in terms of quality of learning outcomes, Serbia's average performance among 15-year-old students is the equivalent of about 1.5 years of schooling behind the OECD average, and the share of students below basic proficiency has increased in the past 5–7 years. For all subjects tested, Serbia's young students continue to perform below the EU and OECD averages, while there remain large disparities in performance within the country. Students in the bottom 20 per cent of socioeconomic status perform the equivalent of nearly 2 years of schooling behind students in the top 20 per cent; the gap is also large between students from large cities versus small towns and villages (see Figure 4). Although disaggregated data from PISA are not available for ethnic minorities, the concentration of many ethnic minorities in low-income rural municipalities indicates that students from ethnic minorities also face sizeable gaps in learning outcomes. At the same time, secondary education is not compulsory in Serbia, and although the net attendance ratio is 94 per cent at the national level, it is lower for disadvantaged groups. For example, 57 per cent of secondary school-aged children in Roma settlements in Serbia are out of school. Enhancing the overall performance gap between Serbia and the EU average will require a focus on improving quality of education for all, while closing equity gaps to "bring up the bottom" of the performance distribution.

Figure 4. Student learning outcomes in Serbia (PISA 2018)



Source: PISA 2018; Level 2 is the baseline level of proficiency at which students begin to demonstrate the competences that will enable them to participate effectively and productively in life as continuing students, workers and citizens (OECD, 2017)

Enrolment in tertiary education continues to increase, though Serbia still lags behind the EU in terms of tertiary education attainment, and labour market relevance remains a challenge.

Enrolment in tertiary education in Serbia has increased steadily over the past years, from around 40 per cent in the early 2000s to nearly 70 per cent, similar to the EU average (see Figure 1). Serbia still lags behind the EU in terms of tertiary education attainment: 34 per cent of the adult population aged 30–34 in Serbia have successfully completed tertiary education, compared to 41 per cent for EU on average.¹ But the increasing enrolment rates in tertiary education are further contributing to the stock of skills in Serbia. Indeed, this trend is expected to continue, given that approximately 80 per cent of secondary school students in Serbia expect to complete tertiary education. In total, 77 per cent of 15-year-old students in secondary education expect to complete tertiary education, compared with 69 per cent in the OECD on average. A positive sign is that even among socioeconomically disadvantaged students, 62 per cent expect to complete tertiary education (see Figure 5). However, labour market relevance and alignment of tertiary education with the changing needs of the workforce remain a challenge. Only 69 per cent of recent tertiary education graduates between the ages of 20 and 34 are employed, the figure being 17 per cent lower than the EU average.²

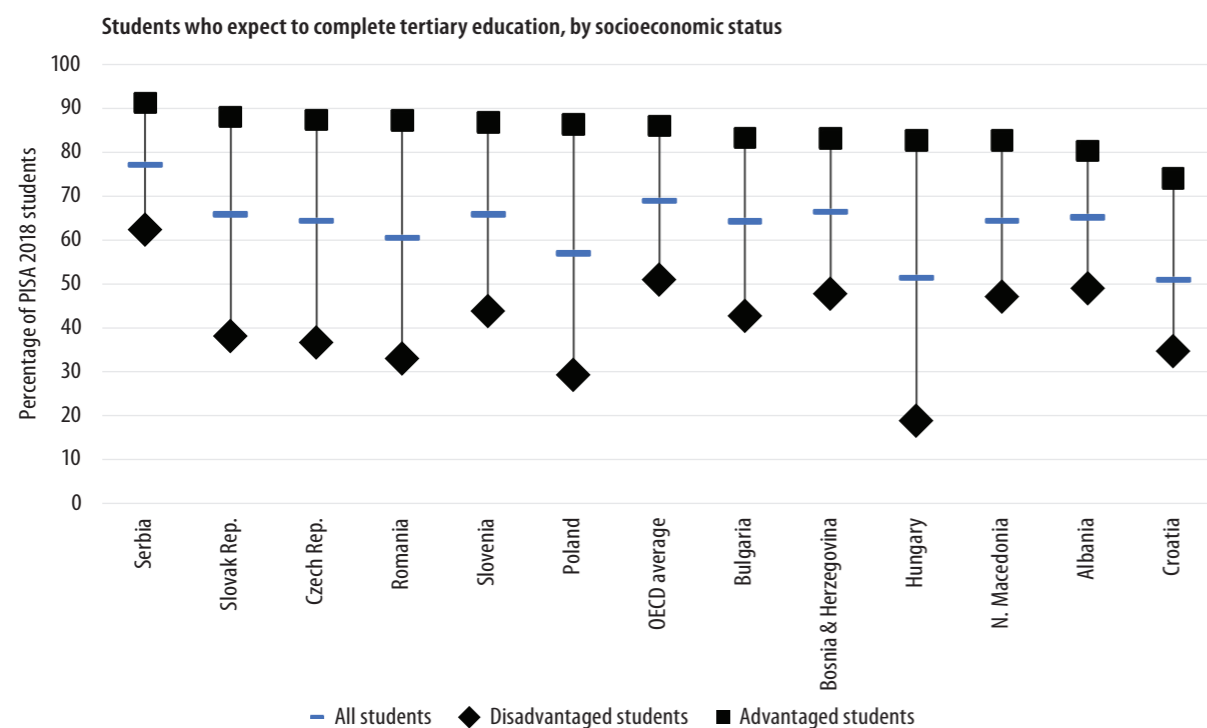
Alignment between secondary vocational and tertiary education also remains an important challenge for efficiency. Tertiary education is the objective for most students, as mentioned above, yet many students access tertiary education after having completed secondary vocational education, which represents an inefficient and perhaps unsuitable preparation for tertiary education. Some 74 per cent of secondary students in Serbia are enrolled in VET (compared to 47 per cent in the EU), and

¹ The EU 2030 goal is to have 45 per cent of the population aged 25–34 with tertiary educational attainment.

² Eurostat (2019).

there is excess demand for gymnasium and VET service sector profiles,³ which further demonstrates the need to align and consolidate secondary VET profiles in preparation for access to tertiary education. Continued consolidation of VET profiles will help to increase efficiency of this pathway and promote well-articulated match between secondary vocational and tertiary education.

Figure 5. Students' ambitions for tertiary education



Source: Authors' analysis of PISA 2018

³ Economics, law, administration, health care, etc.

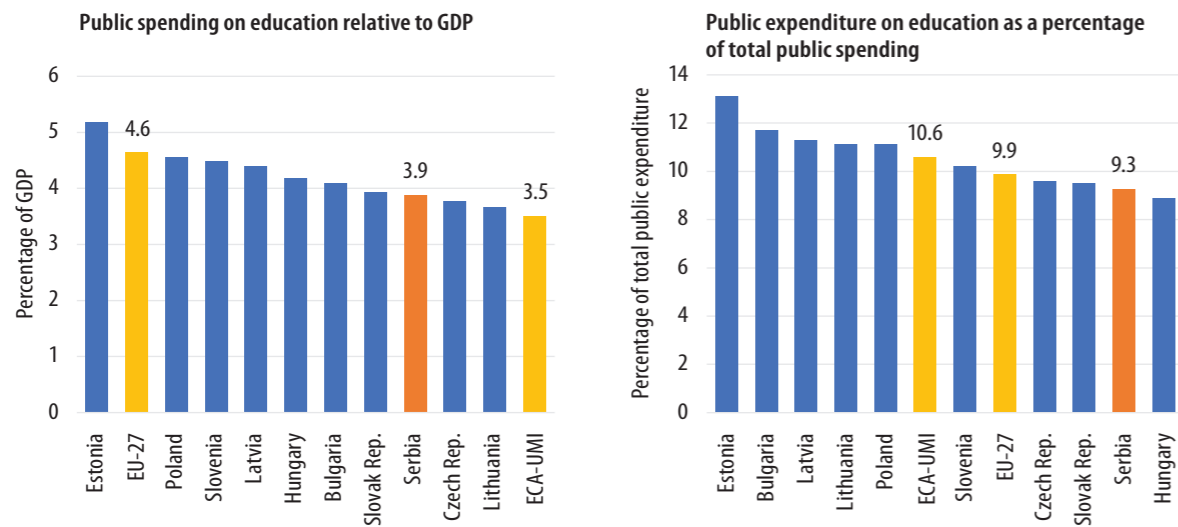
EDUCATION FINANCING AND EFFICIENCY OF RESOURCE USE

Governance of the pre-university education system, particularly related to allocation of financial resources, needs to be well-coordinated across key functions and policy areas to ensure policy coherence with management, curriculum, quality evaluation and professional development (see Annex 1). The governance setup of the education system in Serbia implies that the *Republic level* fully regulates and allocates funds for salaries and other compensation for employees in primary and secondary schools and salaries of preschool teachers in compulsory preschool programme. This level also funds all social transfers to employees and redundancy payments, as well as development programmes and projects of school and capital investments. This level is also responsible for strategic steering of the sector, regulating the selection and recruitment of teachers and school principals, and determining the student achievement standards, teaching and learning plans, and quality assessment framework. However, the *regional level (school administrations)* approves the number of classes and teachers, which drives salary payments. This level also manages intermediary functions between central and school level and supports external school evaluation and professional supervision. At the *local level*, LSGs approve the local portion of school financial plans as well as allocate funds for maintenance costs, teacher professional development, student transportation, and preschool education. LSGs also create and manage the school networks, participate in school boards, and coordinate multisector services for inclusive education. With the Law on Education Inspection, the tasks of school inspection have also been delegated to LSG units/cities; i.e., education inspectors in municipalities and cities. *Schools* are responsible first and foremost for the creation and implementation of the school curriculum programme, as well as strategic school development and day-to-day operations. Regarding financing, schools are responsible for planning, executing and reporting on school budgets, as well as securing additional funds, when possible, through donations, projects and other means. Because all levels play a role in allocation and/or implementation of public funding, close coordination and transparent flow of information between levels is critical to ensure coherence and accountability for service delivery. However, as discussed in this section and further below, this coordination is limited in practice, which contributes to inequitable funding and ultimately inequitable outcomes.

In total, Serbia spends a relatively modest share of its public resources on education compared to other countries in the region and to the EU average. In 2018, the latest year for which complete data were available, Serbia spent 3.89 per cent of GDP on education, compared to 4.64 per cent in the EU27 (see Figure 6). However, Serbia's public spending on education is slightly more than the average for other upper-middle-income countries in ECA (3.5 per cent according to UIS). As a share of total public spending, Serbia also spends slightly less than the average for the EU27, at 9.3 per cent versus 9.9 per cent, respectively. Serbia also spends less than other upper-middle-income countries in ECA, which spend on average 10.6 per cent of total public spending on education. In terms of total spending, a reference point is the United Nations benchmark articulated in the Education 2030 Framework for Action for implementing Sustainable Development Goal 4, which recommends an allocation of at least 15–20 per cent of total government spending for educa-

tion, and/or an allocation of at least 4–6 per cent of GDP to education.⁴ Compared to this reference point, as well as the EU average, Serbia’s spending is rather low, but it is roughly on par with other countries in the region at the same income level as Serbia.

Figure 6. Public spending on education in Serbia and comparator countries (2018 or latest available)

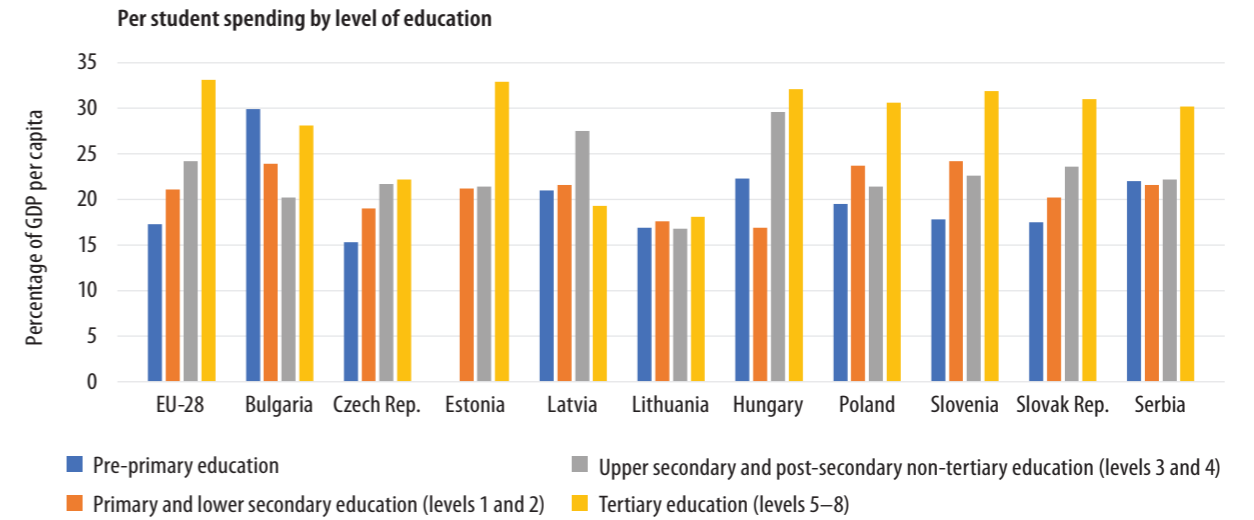


Source: Serbia data for 2018 are based on the final accounts of the budget of the Republic of Serbia and AP Vojvodina for 2018, along with local level spending based on data from the Treasury Administration. Data for comparator countries from UIS, Eurostat.

Serbia spends about 21 per cent of GDP per capita on a per student basis for primary education, which is equivalent to the EU average. Per-capita education spending as a share of GDP per capita is a common indicator used for measuring adequacy and efficiency of education expenditures, while taking into account the varying sizes of student populations. By this metric, Serbia spends on a per-student basis at a level equivalent to the EU average, both for primary education (ISCED levels 1 and 2) and secondary education (ISCED level 3). However, because Serbia has a significantly lower overall GDP compared to other European countries, this means that Serbia spends substantially less per student in *absolute* terms. Based on data from Eurostat from 2017, Serbia spent just over EUR 1,200 per student, compared to the EU average of over EUR 6,500. In terms of pre-primary education, Serbia spends slightly more as a share of GDP per capita compared to the EU, whereas the opposite is the case for tertiary education (see Figure 7).

4 UNESCO (2016).

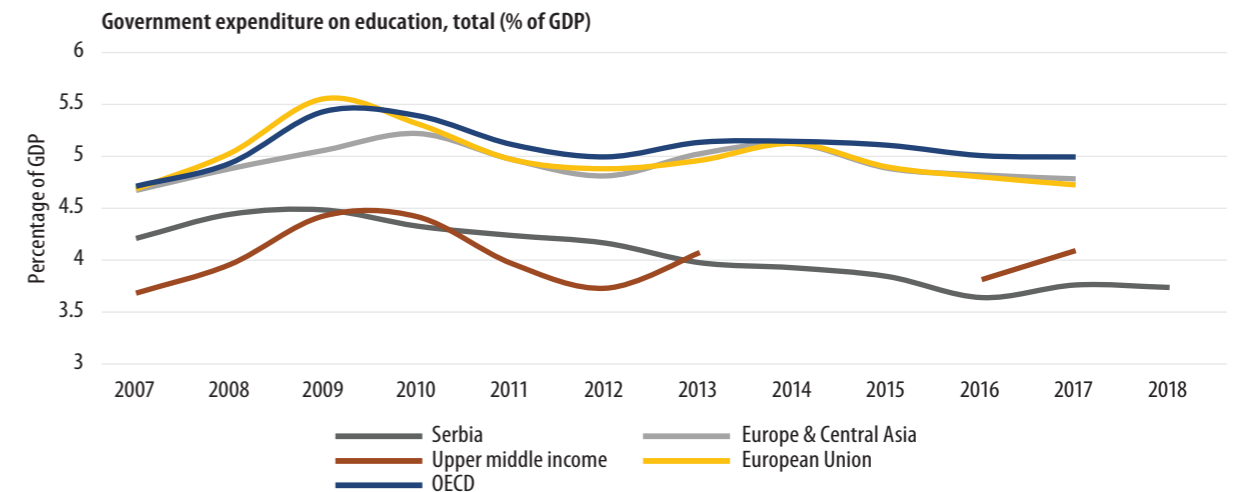
Figure 7. Per student spending by level of education (2017 or latest available)



Source: Authors’ analysis of data from Eurostat and UIS.

Relative to Serbia’s GDP, public spending on education has gradually declined, reflecting the overall decline in the student-age population particularly at the primary and secondary education levels where enrolment rates are already high. Available data sources indicate that public spending on education in Serbia has fallen from a high of around 4.5 per cent of GDP in 2009 to the current level of 3.89 per cent, and it has remained roughly constant at 3.7–3.9 per cent of GDP for the last several years (see Figure 8). This decline comes in parallel with the declining number of enrolled students in the education system, although it is not necessarily consistent with objectives for improving the quality and equity of education. Serbia’s level of public spending remains below other countries in the region which also have declining student-age populations. This trend is mirrored in the structure of the school network, as discussed in the next section.

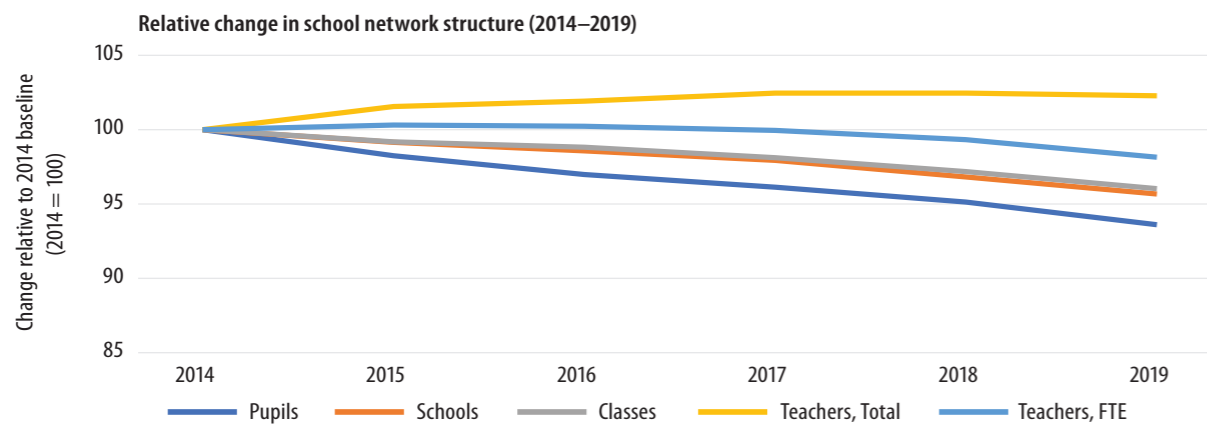
Figure 8. Trends in public spending in Serbia and comparators (2007–2018)



Source: Government of Serbia; UNESCO Institute for Statistics

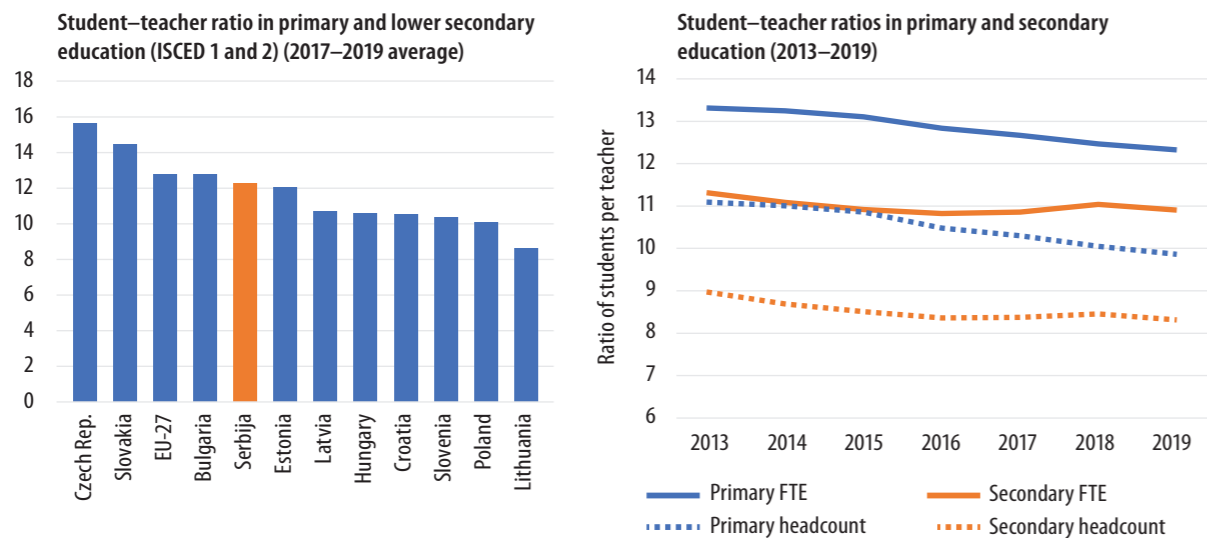
Although the overall level of public spending on education has declined, the number of students has declined at a faster rate, and the school network is only gradually keeping pace with this change, which has produced some modest increases in per-student spending at the primary and secondary education level. The level of spending per student at the primary and secondary levels, relative to GDP per capita, has increased slightly over the past several years. In 2015, considering only the spending on primary and secondary education from the central, Republic-level budget, per-student spending amounted to approximately 16–16.5 per cent of GDP per capita. This has increased modestly to about 18 per cent of GDP per capita as of 2019. As shown in Figure 9, the number of pupils has decreased more rapidly than the number of classes, schools, and especially teachers, and this differential change has led to modest increases in the level of spending per student. However, especially since 2017, the level of staffing relative to the number of students has begun to stabilize.

Figure 9. Evolution of school network for primary and secondary education



Source: Authors' analysis of data from SORS and MoESTD

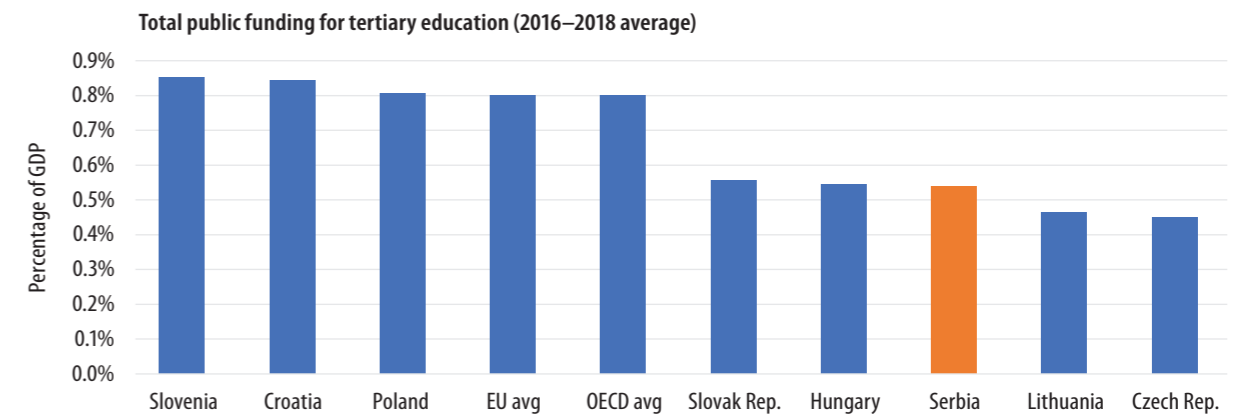
Figure 10. Student–teacher ratios



Source: Eurostat, based on FTE teachers and students; figures for Serbia calculated using SORS and MoESTD data.

Overall, the level of public funding dedicated to tertiary education in Serbia has been declining in line with the overall decline in education sector spending. Overall, Serbia spends about 3.9 per cent of GDP on education at all levels, compared to 4.6 per cent for the EU and 3.5 per cent for other upper-middle-income countries in ECA. Serbia's overall level of spending has remained at around 3.8–3.9 per cent of GDP for the last several years, with the majority of public funds going towards pre-primary, primary and secondary education. At the tertiary education level, public funding from the state budget amounted to about 0.55 per cent of GDP in 2018, compared to the EU and OECD averages of 0.8 per cent of GDP. This figure for Serbia has declined slightly from a high of 0.67 per cent in 2014. It should be noted that these figures only include budget funding for tertiary education purposes, excluding R&D spending and private spending by public HEIs from own source revenues. Approximately 14 per cent of total public spending on education from the state budget goes towards tertiary education. However, as mentioned above, public HEIs generate own source revenues through private tuition payments and spend that in supplement to the overall level of public spending on tertiary education. In 2018, for every 1 dinar spent by the public sector, public HEIs themselves spent another 0.68 dinars. In total, revenues for education purposes in 2018 amounted to about 0.91 per cent of GDP, with 0.55 per cent of GDP coming from the state budget and another 0.36 per cent coming from own source revenues.

Figure 11. Public funding for tertiary education in Serbia and comparators



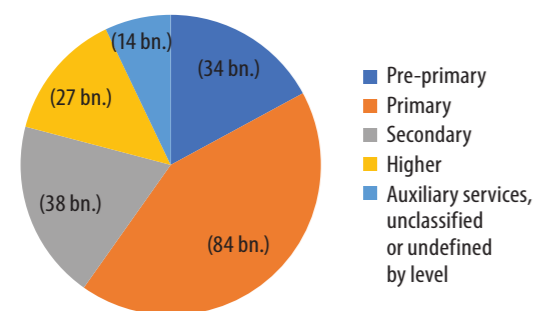
Source: Authors' analysis of data from OECD Education at a Glance, Eurostat, and EUA Public Funding Observatory.

Public funding is crucial to all levels of education in Serbia to ensure access and address inequities. The public sector, including the central (Republic-level) government, the government of the Autonomous Province (AP) of Vojvodina, and LSGs, provides the majority of funding for the education sector, particularly at pre-primary, primary and secondary education levels. Resources from the Republic-level government are transferred as earmarked for education to the provincial government of AP Vojvodina. The State also finances tertiary education in public universities and colleges, although tertiary education institutions also rely on own source revenues from student tuition fees and other sources. Public spending on education – the resources coming from the State – comprise spending at all three levels of government (Republic, provincial and LSGs) and for all levels of education, including pre-primary, primary, secondary, tertiary, and other expenditures not allocated by level of education.

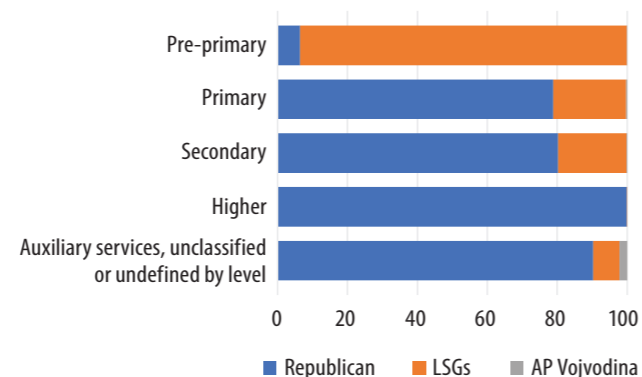
The majority of total public spending on education (62 per cent), considering public spending from all levels of government, goes to primary and secondary education, even though enrolments at these levels are declining. Beyond this 62 per cent of spending, another 17 per cent goes to finance pre-primary education, followed by 14 per cent for tertiary education and 7 per cent for auxiliary services or other education expenditures not classified or defined by level of education (Figure 12). Compared to the previous year with available data, preschool expenditures increased slightly from 2017 to 2018 (by about 1 percentage point), while the share spent on tertiary education declined by the same amount. Similarly, spending on primary education decreased slightly (<1 percentage point), while spending on secondary education increased by the same amount.

Figure 12. Composition of total public spending on education

Composition of total public spending on education, by functional classification (2018, in RSD bn and percentage)



By functional classification and level of government



Source: Authors' analysis of data provided by MoESTD and LSG expenditures database. For the central/state level and the autonomous province of Vojvodina, calculation is based on the data of the final accounts of the budget of the Republic of Serbia and AP Vojvodina for 2018. For the local level of government, calculation is based on the Treasury Administration data from the payment system for 2017 and increased for the growth rate realized in the sample of 27 LSGs in the period 2017–2018 (Data from the sample of 27 LSGs represent more than 60 per cent of total expenditures on education executed at the local level of government). Growth rate of total expenditures on education in the sample in the observed period is 15.5 per cent nominally.⁵

⁵ Note on calculation: 1. AP Vojvodina's total expenditures of 0.7 billion include only allocations from the Budget of AP Vojvodina, but not transfer funds from the state budget for salaries of employees in education in Vojvodina. 2. Expenditures of local self-governments include allocations from payment transactions of all municipalities and city treasuries, reduced by the amount of transferred funds from the Republic of Serbia budget for preparatory preschool programme (RSD 2.1 billion). Allocations of AP Vojvodina Treasury are not included because they are calculated either through the allocations of the State (transfer funds) or through the allocations of municipalities in AP Vojvodina, or in a small amount through the allocations from original revenues of AP Vojvodina. Allocations include municipalities from Kosovo (under UNSR 1244). Having in mind that budget execution data at level of local self-governments for 2018 were available for only 27 LSGs (although these 27 LSGs represent more than 60 per cent of total expenditures on education executed at the local level of government), calculation of expenditures at the local level is based on assumption that the same growth rate as those recorded in the sample was realized in the rest of LSGs for which data were not available. 4. Expenditure for preschool education includes all local self-government expenditures from functional categories 910 and 911, as well as expenditures of the Republic under the functional classification 910 – transferred funds from the Republic of Serbia budget for preparatory preschool programme (RSD 2.1 billion). 5. Expenditures for primary education include all expenditures of the Republic and AP Vojvodina under the functional classification 910 (except for the aforementioned transfer funds for preparatory preschool programme) and expenditures of cities and municipalities under functional categories 912, 913, 914 and 915. 6. Allocations for secondary education include all expenditures of the Republic and AP Vojvodina under the functional classification category 920 as well as the allocations of cities and municipalities categorized under 920, 921, 922 and 923. 7. Allocations for higher education include all expenditures of the Republic and AP Vojvodina under the functional classification category 940, as well as the allocations of cities and municipalities categorized under codes 930 and 940. 8. Expenditures within the category "Expenditures that are not defined by level, unclassified expenditures and auxiliary services in education" include allocations of the Budget and AP Vojvodina under codes 960 (usually include the costs of pupil and student standards, various scholarships, etc.) and 980 (costs of the Ministry, institutes, etc.). This category includes the expenditures of cities and municipalities categorized into categories 900, 950, 960, 970 and 980.

Although the central government provides the majority of funding for education, local self-governments provide nearly one third of public resources for education, highlighting both their critical role as partners in education service delivery and the challenges in ensuring equitable access to quality services. In total, the central government provides 71 per cent of funds for education, with another 29 per cent coming from LSGs. This structure of financing is mostly unchanged from the previous year, though the share of LSG spending in total spending did increase slightly by about 1–2 percentage points. LSGs play an especially important role for financing pre-school education – they contributed 94 per cent of public funds for pre-primary education as of 2018. They play the central role in funding preschool employees' salaries, as well as maintenance and utilities costs for preschools. Additionally, LSGs provided about 20 per cent of public funds spent on primary and secondary education in the same year. Those funds also have a critical role in supporting school improvement, teacher professional development, and equity and inclusion initiatives at the local level. In particular, LSGs finance in-service education and training (INSET) for teachers and school staff, as well as support for students with special educational needs, along with maintenance and utilities costs for primary and secondary school facilities. If available, schools also use own source revenues to co-finance some of these activities. However, LSGs range considerably in their level of development and their access to tax revenue with which to finance such services.⁶ The central level does not factor in the amounts spent by LSGs on education, which contributes to inequitable levels of spending and ultimately inequitable quality of services across LSGs. This is discussed in more detail below.

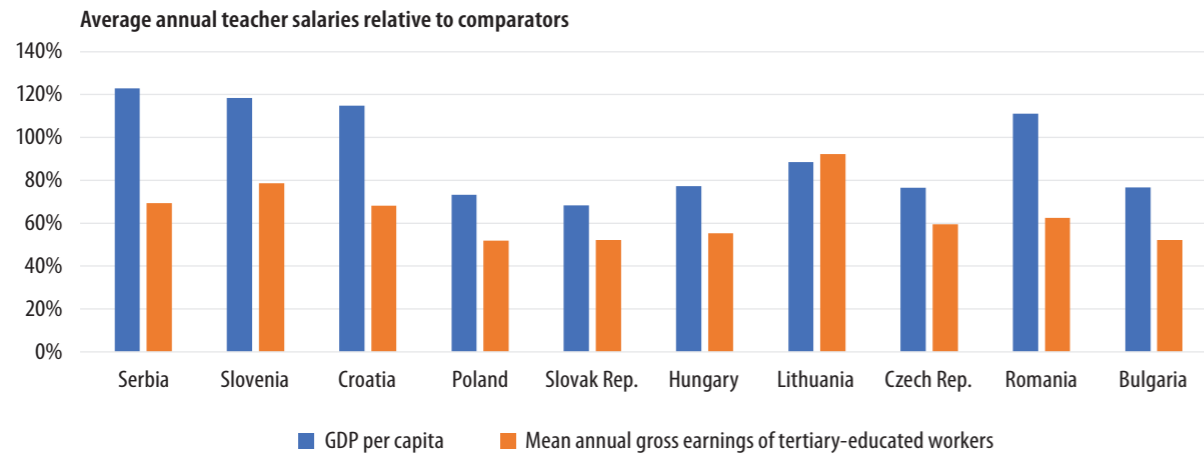
Recurrent spending, comprised primarily of teachers' salaries, accounts for about 96 per cent of total education spending. The high level of recurrent spending is typical in the education sector across most countries, and Serbia's level of spending is comparable with other ECA countries such as Bulgaria, Croatia, Slovak Republic, Slovenia, and Poland. About 67 per cent of spending from the central and provincial levels goes for staff compensation, including salaries, allowances, employee benefits, social contributions and benefits, and other forms of compensation (economic classification category 41). While overall education spending has declined in recent years, teachers' salaries have been adjusted in line with public sector wages. Teachers' salaries were increased (along with that of all public servants) by 10 per cent in 2017, and again by 9 per cent in 2019, with another modest increase in 2021 on labour cost.⁷ Even so, average teachers' salaries in Serbia amount to about 69 per cent of those of other tertiary-educated workers, although compared to GDP per capita, teachers' salaries in Serbia are relatively higher than in other countries (see Figure 13). Beyond recurrent spending, about 4 per cent of education spending nationwide goes towards capital investments. However, recent investments have been planned under the Public Investment Management Office for school infrastructure, digitalization, and teaching and learning materials.

⁶ The Law on Financing of Local Self-Governments (LFLSG) regulates the area of financing subnational governments. LSGs are financed from own source revenues, conceded revenues, earmarked transfers and non-earmarked transfers. The LFLSG offers a complex formula for determining the inter-LSG proportion of transfer based on criteria including population, area, number of schools and classes in primary and secondary education. More detail is available in the Serbia Public Expenditure and Financial Accountability (PEFA) Performance Assessment Report.

⁷ OECD (2020).



Figure 13. Teachers' salaries in Serbia and comparator countries

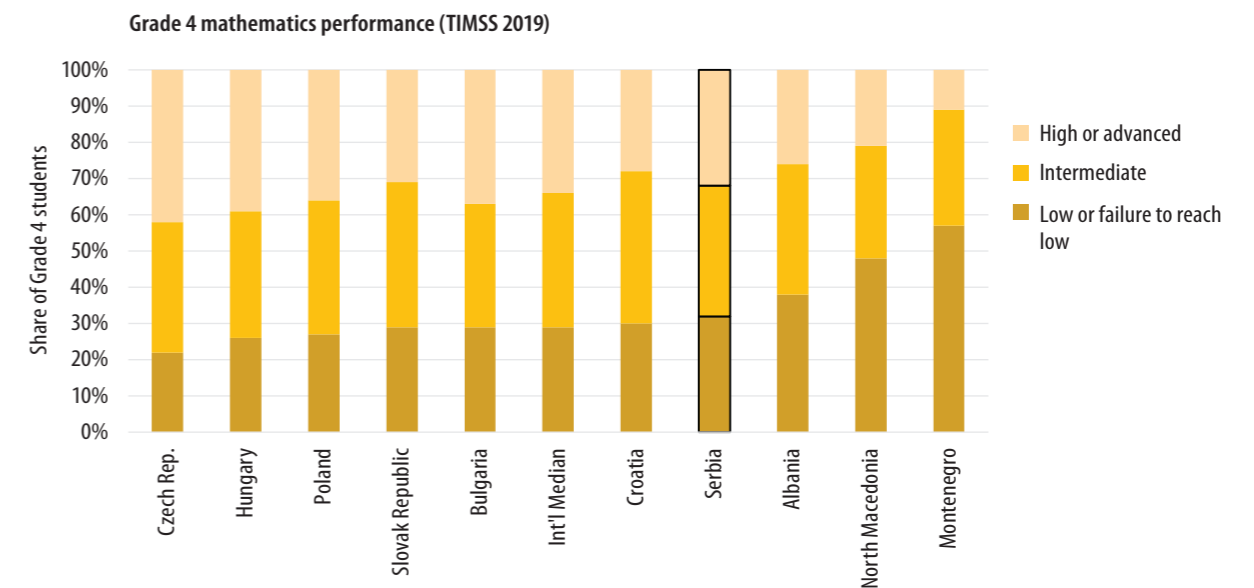


Source: European Commission/EACEA/Eurydice (2020) and Eurostat.
 Note: Mean annual gross earnings of tertiary-educated workers includes the industry, construction and services sectors, excluding public administration, defence and compulsory social security.

QUALITY OF SERVICE DELIVERY

Serbia's overall performance on international learning assessments for primary education is strong, but performance in later grades, as well as equity in general, remain concerns for the system. The results from TIMSS 2019 show that fourth-graders' performance is above average, and that Serbia's Grade 4 mathematics achievement is equivalent to that of, for example, Australia, Italy, Canada, Slovak Republic, Italy and Spain. Even so, about a third of students reach only the low international benchmark or fail to reach this benchmark (see Figure 14). However, international assessment studies⁸ in later grades, at the transition point between primary and secondary education, indicate that the quality of outcomes deteriorates. PISA has consistently demonstrated that the achievement of students from Serbia has been below the international average by about half a standard deviation, equivalent to about one and a half years of schooling compared to the average in OECD countries (across all tested domains). Most recent findings come from the PISA 2018 study showing that nearly four in ten 15-year-old students are not performing even at the basic level of reading, mathematics and science literacy. This places them well below OECD average, although the results are comparable to those of neighbouring countries. No significant changes in scores occurred compared to PISA 2012.

Figure 14. Quality of student learning outcomes

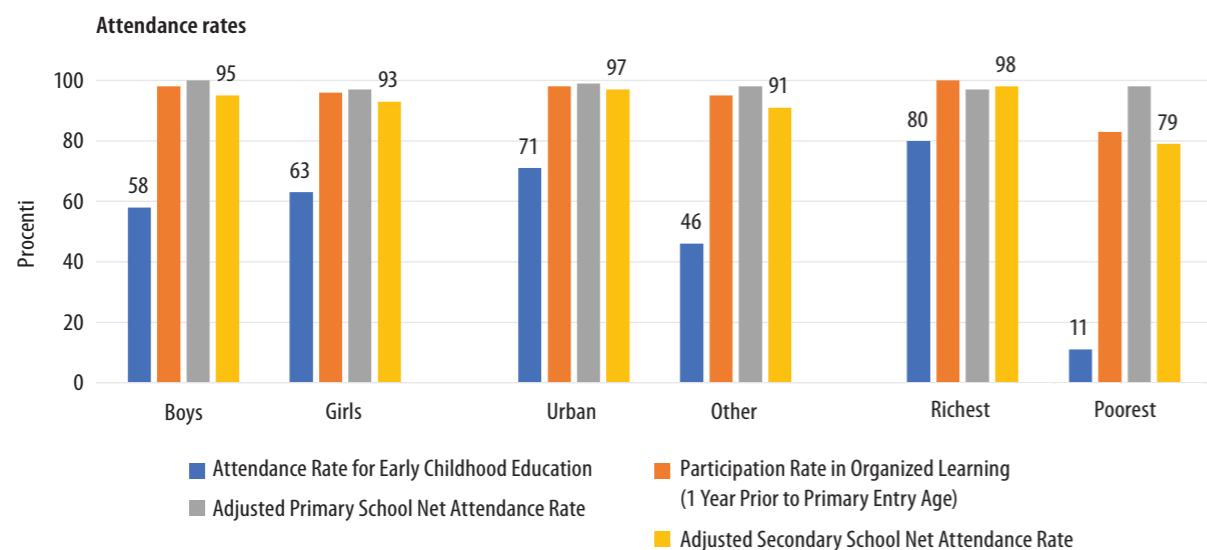


Source: Trends in International Mathematics and Science Study (TIMSS) 2019

⁸ Serbia has participated in multiple cycles of PISA (2003, 2006, 2009, 2012 and 2018) as well as TIMSS (2003, 2007, 2019).

The share of the poorest students who belong to the category of functionally illiterate is substantially higher relative to the overall population. The rate of functional illiteracy in the poorest group of students (the lowest quintile) is over 20 percentage points higher than that in the overall population. If that is expressed in terms of risk, it means that the poorest students in Serbia have around 2.5 times higher risk of being functionally illiterate after nine years of school relative to the overall student population. It also is related to the quality of education available to students, as socioeconomic status (SES) has a key effect on students' educational aspirations. According to PISA, in Serbia the share of the most successful students with the lowest SES, enrolled in general secondary schools is around 30 percentage points lower than the average for the group. When that is translated in opportunity terms, the lowest SES students have around 3.5 times lower opportunity to be enrolled in general secondary education relative to the average. On the other side, the opportunity for the highest SES students was two times higher than the average. Even in terms of attendance rates, SES and urban vs. non-urban location has an impact, particularly for early childhood education and secondary school (see Figure 15).

Figure 15. Disparities in attendance rates



Source: MICS 2019

The ongoing orientation of new curricula in preschool, general (primary and secondary) and vocational education towards learning processes and outcomes, and ultimately towards development of competences rather than subject content, is a key reform that requires further support from all elements of the education system. In addition, the digital transformation of the education system that started several years ago, with considerable investments in infrastructure and teachers' professional development, has potential to reduce underachievement in reading, mathematics and science (reducing the share of students with low functional literacy in these areas). However, this is not a given for low-income or otherwise disadvantaged students; without careful consideration to equity issues, digitalization in the education sector may worsen the challenge. Following from the insufficient results from PISA 2018, coherent policy approaches are needed to synchronize measures targeting teacher quality, school leadership, school improvement, and external and self-evaluation of schools.

Strengthening availability and planning for teacher professional development is a critical component for improving school quality, and LSGs together with school directors play an important role in this. The lagging level of student achievement and assessment of ongoing curricular reform proves that education authorities have been struggling with planning and implementing policies that would effectively raise learning outcomes. Teachers are critical for supporting this transformation, but they are not sufficiently equipped with the knowledge and skills needed for building young learners' competences. Teacher training remains largely theoretical and based on subject knowledge, rather than teaching methods. Due to the autonomy of universities, it has proved difficult to initiate harmonized reforms in pre-service teacher education and training that are in line with key reform initiatives in the sector. In terms of upgrading the skills of the current teaching workforce, teachers, as direct users, depend on the decisions and financial strength of their schools and LSGs, and both have limited resources. The resulting problem is that teachers have to pursue training opportunities which allow for minimum compliance with in-service education and training (INSET) requirements by attending seminars paid out of their own pockets or those that are free of charge. Thus, going forward, the relationship between pre-service training, school external evaluation, school improvement initiatives, and teacher INSET trainings should be more explicit.

Although improving the system of teachers' INSET is among the core priorities of the Education Strategy⁹ 2030, there is no link between the mechanism for funding INSET and accountability for INSET as the main instrument to improve teaching quality. Professional development of teachers is seen as the main instrument for the implementation of the reformed curricula. For that purpose, public institutions have been developing and implementing large-scale teacher trainings since 2018, funded through the state budget, EU and other funds of bilateral donors. Indeed, PISA 2018 data highlight that Serbia has a high participation rate in continuous professional development (CPD), similar to the average in OECD countries. While there is an emerging culture of in-school collaboration and peer learning among teachers, several hurdles remain, especially the lack of funding and limited national guidance. LSGs play a critical role in funding teachers' INSET, although often LSGs cover only a portion of the funding required, leaving schools to provide additional funds from their own revenues (which are even more limited) and teachers to pay out of their own pockets. About 37 per cent of teachers reported the need to contribute to funding their own INSET, compared to about 25 per cent in other countries.¹⁰ At the same time, the funding provider – the LSG – has no mechanism for influencing the system. There is a need for careful analysis of the effectiveness of the current system for professional development of teachers and support provided to low quality and low-resourced schools and municipalities.

The current system disadvantages schools in the least developed LSGs – such schools tend to have lower quality of education and lower school evaluation ratings, but also the least amount of financial resources with which to fund teachers' INSET that would be needed to improve quality. As would be expected, the level of development of the LSG influences the overall amount of education spending executed by the LSG, with more developed LSGs spending more on education, including on contractual services which covers teachers' INSET, among other things. The reverse is also true; the least developed LSGs spend the lowest share of overall spending on education, and they

⁹ The Education Strategy 2030 highlights several core priorities related to teachers, namely the improvement of initial education of teachers, building an adapted system of professional development and evaluation of teachers, providing conditions for employment of teachers who had previously acquired appropriate education for the teaching profession, and providing conditions for recognizing the importance and improving the status of the teaching profession.

¹⁰ OECD (2014).

also spend the least amount on contractual services. However, schools in the least developed LSGs also have the lowest school evaluation ratings on average, reflecting the ‘vicious cycle’ in which disadvantaged schools have the lowest degree of financial resources for school improvement. Local level governance is not resourced for education policy planning and financing, including both financial and human resources. There is no prioritization scheme for investment in INSET in low quality schools situated in least developed LSGs.

Table 1. Education spending relative to LSG spending and primary school evaluation ratings

Level of development	Education spending as share of total LSG spending	Contractual services as share of LSG spending on education	Average primary school evaluation rating
Most developed LSGs			
Quintile 1	19.81%	1.45%	3.43
Quintile 2	20.62%	1.28%	3.21
Quintile 3	19.98%	1.24%	3.35
Quintile 4	18.77%	1.20%	3.12
Least developed LSGs			
Quintile 5	16.40%	0.92%	3.03

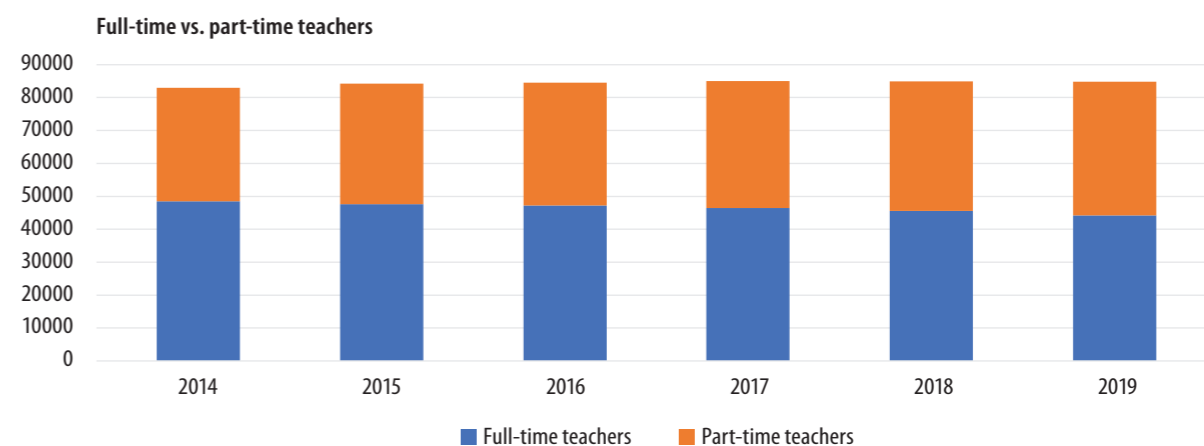
The INSET system in Serbia has quasi-market characteristics, which require more support to align the quality of the supply of INSET with teachers’ demands for INSET. According to data from IIE, there is a large number of over 1,000 accredited INSET programmes currently available to teachers, although about 21 per cent of these have never been delivered, while another 13 per cent have only been delivered once, with 30 participants or fewer. There is also an uneven distribution of INSET programmes by priority area, with over half (57 per cent) of programmes focusing on Priority Area 3 (related to teachers’ competences for planning and implementing teaching aimed at learning outcomes). Although this is critical to the curricular reform, there are relatively few offerings related to Priority Area 1 (digital competences and use of ICT)¹¹ and Priority Area 2 (working with children needing additional educational support).

The teacher workforce is increasingly comprised of teachers working on a part-time basis: the share of part-time teachers has risen from 41 to 48 per cent of the total since 2014 as a result of the decreased number of students and large number of small schools which do not have enough classes to guarantee full-time employment for all teachers. While the high share of part-time teachers influences overall employment in the sector, it can also influence the quality of service delivery, for example in the amount of extracurricular activities offered in schools, resulting in lower education quality and a decrease in some of the other important aspects of school quality, such as school climate and ethos.

11 Integrating technology into instruction was cited by over 60 per cent of mathematics and science teachers at Grade 4 as a key area of need for INSET in Serbia, according to TIMSS 2019.

To take advantage of the educational opportunities presented by demographic changes for increasing education quality in Serbia, MoESTD introduced the concept of schools working only in one shift, with extended after-school programmes and extracurricular activities. Currently, the average recommended minimum instructional time in the primary school compulsory curriculum in Serbia amounts to 628 hours per year, compared to an average of about 739 hours per year in the EU28.¹² This difference amounts to about 4 school weeks per year. In some European countries, such as the Netherlands and Denmark, the minimum instructional time for the same level of education is in excess of 900 hours per year. Additionally, the use of dual shifts in some Serbian schools, particularly in urban areas, can further contribute to a ‘squeezing’ of instructional time and a loss of collective school identity that is important for maintaining a strong and productive school culture.¹³ The concept of the MoESTD to promote single-shift schooling together with after-school programmes and extracurricular activities could potentially influence quality of learning outcomes if it is used to increase hours of instruction, offer of free-of-charge extracurricular activities especially for most vulnerable children, and quality in-school teacher professional development. However, empirical research shows that the impact of increasing instructional time (either through extending the school day or school year) on student learning depends heavily on the quality of instruction; in other words, the way that instructional time is used matters more for learning than the amount of time per se.¹⁴

Figure 16. Evolution of teachers’ working status



Source: Statistical Office

12 Based on authors’ analysis of data on recommended annual instruction time in full-time compulsory education in Europe in 2018–2019, as reported by the European Commission/Eurydice.

13 Bray (2008).

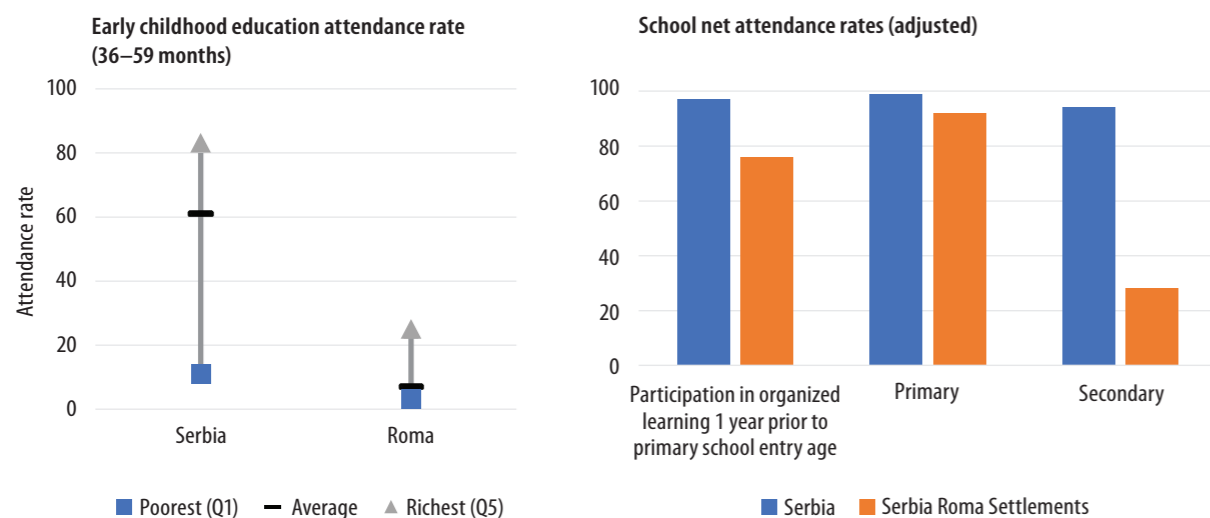
14 Cooper and Allen (2010).

EQUITY AND INCLUSION

EARLY CHILDHOOD EDUCATION

Expanding access to and quality of early childhood education and care (ECEC) is a principal objective of MoESTD and the Government of Serbia. Access to pre-primary education continues to increase, but there are still persistent disparities in access by location and socioeconomic status, particularly for Roma children. The latest MICS 2019 results show that attendance rate in early childhood education (36–59 months) in the overall population in Serbia is still low at 61 per cent, although with a noteworthy increase in comparison with MICS 2014 when the attendance rate was 50 per cent. Equity remains a significant concern, as only 10.5 per cent of children from the poorest quintile and 7 per cent of children from the Roma population are enrolled. There are significant inequities in enrolment of children 3–6 years old between urban and non-urban areas, as well as between children with different socioeconomic status. This is due to an unevenly distributed network of kindergartens and lack of seats, parental attitudes (lack of awareness of the importance of early learning), large distances to the nearest preschool, lack of transportation, costs associated with attendance, and quality of provision. Based on projections, despite negative population growth, Serbia will need to increase the supply of regulated ECEC by 71 per cent in order to meet full enrolment for children aged 3–6 years by 2030.¹⁵

Figure 17. Equitable access to early childhood education

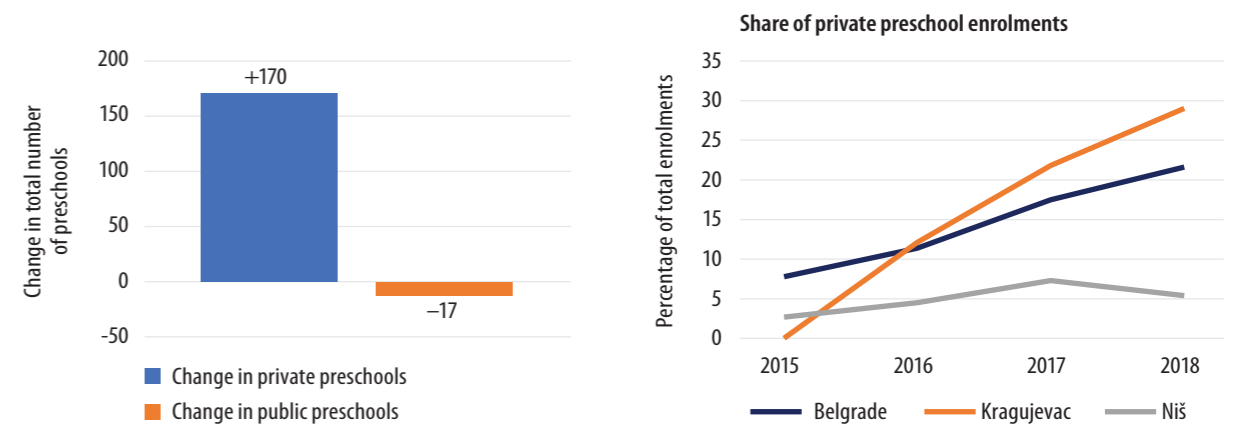


Source: MICS 2019

After the Law on Foundations of Education System (LFES) was adopted in 2017, available evidence indicates that most LSGs spent more on preschool education. Amendments to the law stipulate that LSGs have to finance up to 80 per cent of economic price of child day care services; previously this had been exactly 80 per cent. Based on data available for 25 LSGs, the majority of LSGs spent more on preschool education in 2018, compared to 2017. This is the case regardless of level of development: even the majority of less developed LSGs spent more on preschool education in 2018 compared to the previous year. However, 6 of the 25 LSGs did spend less on preschool in 2018, although 5 of those 6 LSGs spent only 1–5 per cent less than the previous year.

The private preschool sector currently has a small but significant share of enrolled children nationally (13 per cent) accounting for as much as 78 per cent of the growth in total ECEC enrolments nationally during the last few years, highlighting the importance of the private sector in ensuring that equitable access continues to increase. Vouchers have already been introduced in several cities in Serbia, where they have led to increased enrolment (in Belgrade, Kragujevac). For further scale-up, careful piloting is needed to test impact in rural areas and ensure the efficacy of the model when based on a careful calculation of economic costs and with embedded equity elements, prioritizing families with low socioeconomic status (UNICEF, Oxford Policy Management 2021).

Figure 18. Private enrolment in preschool education in Serbia



Source: Study on the feasibility of using public–private partnerships to expand access to preschool in Serbia, Oxford Policy Management, 2021

15 UNICEF and Oxford Policy Management, 2021.

INCLUSIVE EDUCATION

In addition to ensuring equity of access to early childhood education, inclusive education has been a priority for 10 years, although implementation capacity has not yet caught up with legislative changes. Progress has been made at all levels, but the capacity of teachers and schools to absorb and apply new inclusive practices and knowledge has varied significantly, resulting in equity gaps. Across regions, school attendance rates are high for both primary and secondary level (94 per cent and higher). However, disparity around the socioeconomic line persists for children from the poorest quintile and Roma children. Attendance rates for children from Roma settlements are lower than the national average at all three levels, particularly at the level of early childhood education (just 7 per cent) and secondary education (28 per cent); noteworthy is the increase in attendance rates of girls from Roma settlements (27 per cent in 2019 compared with 15 per cent in 2014). Additionally, many children with disabilities as well as children from minority groups continue to be segregated in special schools. Data from the National Report on Inclusive Education (MOESTD, UNICEF 2020) showed that nearly 5,000 students are educated in schools for the education of students with disabilities, and that the dominant trend is the transition of students with disabilities from regular to special schools rather than the other way around.

The provision of additional support for inclusive education is the responsibility of local self-government units, and the level of economic development of the local self-government unit has direct and significant impact on whether additional support will be provided. Underdeveloped, low-income municipalities and low-quality schools do not receive targeted support from the respective LSGs. On the other hand, intersectoral financing (covering education, health and social support with a holistic child-centred focus) has not been introduced at the national or the local level to support implementation of inclusive education; instead, financing for inclusive education remains segmented, which further contributes to existing equity gaps. For example, the LPE specifies that the number of students per class shall be reduced by two per student being educated in accordance with an accommodated individualized educational plan (IEP). This method of financing creates an incentive for schools to develop IEPs for students even in situations where it is not necessary, to maintain classes with smaller numbers and retain jobs for teachers.¹⁶

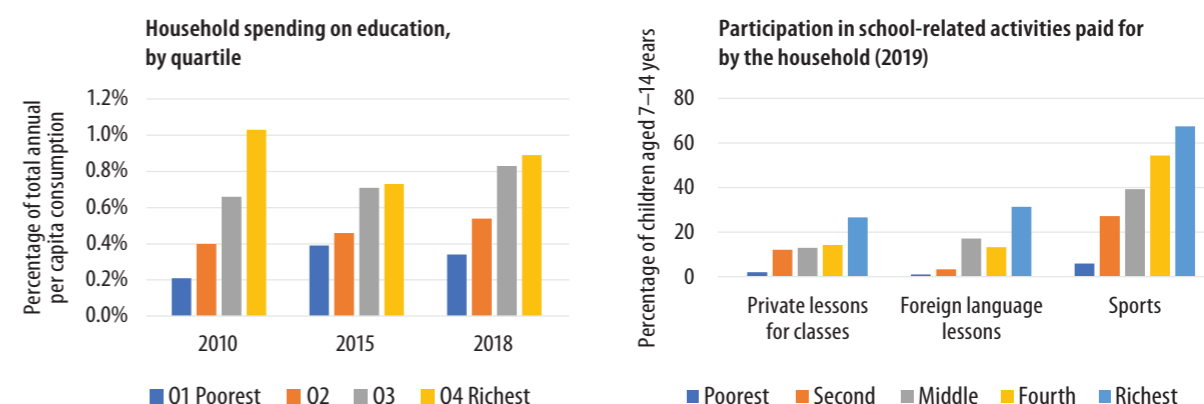
LSGs are also responsible for financing other means for promoting inclusive and equitable education at the primary and secondary education levels, but part of this spending is designated as social protection/social welfare rather than education. A part of the expenditures aimed at supporting the education of children is executed in the field of social protection. This includes cash and in-kind benefits provided to children from vulnerable families. On average, these expenditures accounted for only 1 per cent of the total expenditures on education in the considered LSGs. However, there was some variation, with three LSGs – Aleksinac, Veliko Gradište and Kruševac – spending closer to 5 per cent of total spending on social protection measures aimed at promoting education.

Households themselves contribute funding for education, particularly for private lessons and for extracurricular activities, which compounds some of the educational inequities that already exist in the system. Higher income households spend more on education, particularly for tertiary education, but they are also more likely to pay for out-of-school educational activities like private lessons, sports and other extracurricular activities. This means that low-income children are excluded

¹⁶ National Report on Inclusive Education in the Republic of Serbia 2015–2018.

from activities which support learning. For example, 41 per cent of adolescents aged 10–14 years who attend school are participating in sports activities paid for by the household, with another 22 per cent attending private lessons for classes and 18 per cent attending foreign language lessons, both paid for by the household.¹⁷ The COVID-19 pandemic has also further added stress to households and their ability to finance educational expenses. About one third of the population has been faced with reductions in household income at some point during the epidemic (in either the first or second wave of the relevant survey¹⁸), and parents are reporting a decrease in spending on children's additional needs, including education and extracurricular activities. This means that some needs will remain unmet, which could further contribute to the existing educational inequities.

Figure 19. Household spending on education



Source: Household Budget Surveys for 2010, 2015 and 2018, with analysis limited to households with positive spending on education; MICS 2019

TERTIARY EDUCATION

The strict division of students into two groups – budget-funded and self-financed – creates several adverse effects from the equity point of view. The division commences at the enrolment – students are ranked according to their success, comprised from two components: average grade in secondary education and entry exam. The socioeconomic background of students – although known to be highly influential on secondary education (e.g., TVET versus gymnasium) as well as grades and exam performance – is not included or considered at all as part of the enrolment process. Therefore, as students from wealthier and better-off families tend to enter HEIs with higher grades and entry exam scores, it is understood that students from wealthier families study completely for free if they manage to enter (and maintain) the status of budget-funded student. Consequently, the reproduction of social inequalities is present in the existing higher education system in Serbia.¹⁹ This is further confirmed by the latest available data from the EuroStudent survey in 2017, in which 56 per cent of higher

¹⁷ MICS 2019.

¹⁸ UNICEF and USAID (2020). Study on the effects of Covid-19 pandemic on families with children in Serbia (second wave).

¹⁹ Babin, M., Pantić, N., and Vukasović, M., 2009, Reprodukcijska socijalnih nejednakosti kroz obrazovne tranzicije. Analiza karakteristika siromaštva u Srbiji.



education students come from a family with at least one parent who holds a tertiary-level diploma. Between 2012 and 2017, Serbia recorded an 11 per cent decline in the share of university students whose parents have not completed tertiary education, the steepest decline among 19 countries covered by the two rounds of the survey.²⁰

IMPACTS OF COVID-19 ON PRE-UNIVERSITY EDUCATION

MoESTD managed to secure nearly universal coverage with remote learning during the COVID-19 crisis, but the digital divide and the likely lower quality of remote teaching may be exacerbating existing inequities. The COVID-19 pandemic has exposed the weaknesses and the limited digital literacy of the education system at large, while also accelerating processes of innovation and digitalization. From mid-March 2020 until the end of the school year, schools in Serbia were closed, and learning went largely to remote teaching and learning (TV lessons, use of online platforms, IT tools and solutions) covering approximately 99 per cent of students. However, coverage of students from vulnerable groups was much less favourable: 17 per cent of Roma students in primary schools were not able to access distance learning, and only about 54 per cent of students with disabilities were able to participate in online platforms and interactive lessons via digital tools. The main obstacles were related to lack of internet connectivity in their homes, lack of digital devices, and weak digital literacy among teachers and parents. Despite high coverage, little is known about quality of distance learning and the impact on learning outcomes of children. For example, there is some evidence of loss of instructional time in the last school year, with about two thirds of children aged 7–12 using distance learning for less than 4 hours per day. Additionally, 25 per cent of children had some or many problems adapting to distance learning, which also hinders quality of instruction.

Table 2. Distance learning coverage, by education level and modality

	Primary schools	Secondary schools	Schools for students with disabilities	Total
Following TV classes	95%	63.9%	26.7%	84.5%
Participation in online platforms and interactive lessons via digital tools	84.7%	99.4%	54.4%	89.2%
Participation in alternative forms of distance learning	1.6%	1.7%	28.4%	1.8%
Students not covered by distance learning	0.7%	1%	7%	1%

Table 3. Students in need of additional educational support after COVID-19 lockdown

	Primary schools	Secondary schools
Roma students	17%	9%
Students with disabilities	4%	3%
Students from other vulnerable groups	6%	33%

Source: Monitoring the Participation and Learning Process of Students from Vulnerable Groups during Distance Learning, MoESTD, Faculty of Philosophy/University of Belgrade, UNICEF 2020. Research on the Effect of COVID-19 Pandemic on Families with Children in Serbia, UNICEF

²⁰ DZHW (2018).





The response to the COVID-19 pandemic has provided evidence of the capacity of education systems to adapt to change, while resources and commitment are needed to sustain and accelerate that change. Many teachers were able to switch online and to change how they teach, posing a challenge to policymakers to sustain this momentum and support the education system in the future. However, while COVID-19 has provided an opportunity to experiment with the use of blended learning modalities, there are clear signs of what the education system needs to do to learn from and sustain change, including a deep and cross-cutting focus on digital skills for students, teachers and parents, as well as school administrators; greater support to teachers for professional development, peer learning and mentoring; and systems for student assessment and data monitoring to track vulnerable or low-performing students and ensure that they can get the individualized attention needed to succeed.

CONCLUSIONS AND RECOMMENDATIONS

There is a need to treat education financing and any savings achieved through efficiency gains as a means to achieve higher order objectives for enhancing quality and improving equity. This requires an approach that will protect the level of spending on education and make education financing more flexible and responsive to the rapidly changing demographic situation and changing needs in localities and education institutions. Below are key conclusions and recommendations.

TRENDS AND OVERALL ADEQUACY OF SPENDING

Proactively adjust policy responses to demographic changes. Demographic trends will continue to influence education policy decisions in the coming years, with the biggest needs in the preschool education subsector. This necessitates an ongoing adjustment and alignment of education policy responses to the needs of demographic changes, with differentiated policy approaches in different regions of the country based on local needs.

Protect overall spending while using efficiency measures as a means to prioritize education equity. Public funding for education is relatively low in Serbia, considering international comparisons, and per-student spending is low in absolute terms. Overall public funding has also declined in recent years, as the overall size of the education system has decreased due to demographic change. Going forward, it will be important that Serbia protects its overall level of education spending, while focusing on initiatives to use that funding efficiently, particularly in primary and secondary education, and with a greater focus on equity throughout all levels of the system.

Introduce a formula-based student funding mechanism²¹ to reflect the real costs of delivery based on students' needs and create incentives for LSGs to organize classes and schools efficiently while taking care of equity. At all levels of education, public funding for education remains based on real costs of inputs, often disconnected from institutional and local needs and changing demographics. Gradual introduction of a formula-based approach that prioritizes students' characteristics and needs, rather than the number of classes, could be an effective yet carefully managed effort to allow more flexibility in funding to meet differing local needs. For example, the formula could include different flexible components, one to ensure stability of basic funding proportional to the number of students, along with various adjustment factors that can account for differences among enrolled students and localities to ensure equity and inclusion and to prioritize school improvement.

Treat education financing as a key policy lever in the Education Strategy 2030 and ensure synchronization with ongoing reforms. Current input-based funding and allocation mechanisms are not allowing funding to serve as a policy lever for improving equity or quality. The Education Strategy 2030 document also does not emphasize education funding as a key tool of policy. It is important to synchronize and align education funding with other ongoing reforms in the sector. Particularly in

²¹ 'Formula funding' is an umbrella term to describe financing of schools on the basis of a set of agreed objective criteria for allocating resources through an impartial process. For more information, please refer to Alonso and Sanchez (2011).





higher education, where the policy landscape has evolved recently in the last several years, public education funding should be treated as a key policy lever for achieving priorities in the sector, although the principle is relevant across all levels of education.

Strengthen managerial capacity and data availability as an enabling condition to use and adapt public funding for local needs. Given the important role of LSGs and school directors in managing and implementing school funding, it is clear that managerial capacity at these levels should be strengthened. Any movement towards a more flexible approach to school funding that places more accountability on LSGs and schools needs to also be paired with transparent availability of data for oversight at the national level. Completing the introduction of the Unified Information System of Education will be a critical step in this process. Additionally, introducing indirect users of MoESTD (schools) in the Budget Execution Information System will also facilitate oversight and transparency on education spending at the local level.

Emphasize efforts to enhance and strengthen workforce effectiveness, recognizing that workforce remuneration represents a high share of education spending and thus the primary resource of the education system. As in other countries, the majority of spending on education in Serbia goes towards remuneration of teachers, school directors and other members of the education workforce. For this reason, enhancing effectiveness of this workforce should be a priority, including making better use of teacher appraisal processes to inform professional development, monitoring quality of initial teacher education, and strengthening the teachers' career structure.

EFFICIENCY

Continue supporting school network optimization over the medium term, particularly in primary and secondary education. On a per-student basis, the level of primary education spending is increasingly inefficient, the result of various trends including demographic change and substantial spatial differences between rural and urban schools, leading to highly divergent student-teacher ratios and class sizes. The Government of Serbia has been concerned with management of local school networks for many years, and progress has been achieved.²² The World Bank has supported MoESTD to conduct feasibility analyses and school mapping exercises to determine options for support. Continuing to support implementation of these actions will be important over the medium term, particularly after the COVID-19 pandemic subsides and schools can fully return to normal operations.

Continue consolidation of outdated VET profiles in secondary schools. The high share of students in four-year VET programmes who proceed to enter higher education institutions indicates the need to ensure a strong alignment between secondary and tertiary education. MoESTD has made progress in optimizing the number of VET profiles and reducing the number that are not in line with the needs of the economy. However, with a higher share of students entering tertiary education each year, it is important to improve the efficiency of this pathway.

²² Described in detail in the Ex-Post Analysis of the Implementation of the Strategy for Education Development in the Republic of Serbia (SEDS) by the Year 2020.



QUALITY

Support targeted measures to improve quality of services and improve learning outcomes through support to schools operating in deprived environments. Serbia's learning outcomes remain on average 1.5 years of schooling behind the OECD average. Outcomes are even larger for low-income and/or disadvantaged students, who tend to be clustered in disadvantaged schools. At the same time, there is no prioritization scheme for investment in INSET in low quality schools situated in least developed LSGs. However, LSGs play a critical role in funding preschool education, as well as primary and secondary education, yet administrative decentralization still poses challenges to quality of education due to inadequate resources and capacity at the local governance level for education policy planning and financing. Therefore, targeted measures aimed at low-performing schools (or LSGs) are warranted.

Consider reform of INSET system and create stronger linkage between teacher INSET planning, school development planning, and the supply and demand for teacher INSET choices. Teacher competences (both pre-service and INSET) are critical resources to improve quality of pedagogy, especially since teachers represent the largest resource invested in the education system. However, the current system penalizes low-performing schools in the least developed LSGs; such schools tend to have lower quality of education and lower school evaluation ratings, but also the least amount of financial resources with which to fund teacher INSET that would be needed to improve quality. Reforming the current INSET system and ensuring adequate funding for teacher INSET as well as a systematic linkage at the school and local levels between assessment of teacher INSET needs and school development planning would help to accelerate and strengthen school improvement efforts. Targeted efforts to strengthen the capacity of school principals and the IIE to assess teacher INSET needs and plan for INSET funding requirements would also be beneficial for the quality of education.

Explore options to move towards single-shift schools and increase instructional time. MoESTD implemented a pilot project to introduce single-shift work in primary schools, with the goal of improving quality of interaction and supporting transversal competences through enabling extracurricular activities. It would be important to study the effects of this pilot and assess the potential for expanding single-shift schooling as a means to increase instructional and extracurricular time in schools.

Implement quick assessments of quality of online learning and learning losses as well as learning recovery programmes where needed, using lessons learned to strengthen quality and resilience over the medium term. The COVID-19 pandemic has exposed weaknesses and limited digital maturity of the education system, not only in Serbia but all over Europe and the world. It has also accelerated previously unthinkable innovations and digitalization in the education sector, with trends like blended learning as a promising opportunity if implemented effectively. However, there is currently little information in Serbia about the quality and effectiveness of online learning as implemented in response to the pandemic. Quick assessments of quality together with targeted learning recovery programmes, such as tutoring or accelerated learning programmes, can help to course-correct and address gaps. Going forward, lessons learned from experiences with distance learning can be used to 'build back better,' with emphasis on system resilience and on strengthening pedagogy adapted to different modalities of education delivery, including blended learning and provision of additional support such as psychosocial support, parental engagement and quality assurance. Targeted measures to reach and include the most vulnerable through, for example, mental health support, water, sanitation and hygiene (WASH), and nutrition, and emphasis on student and teacher well-being will also be critical.

EQUITY

Prioritize equity of access to preschool education, focusing on closing equity gaps among disadvantaged communities. Inequality in access to education starts early with early childhood education and persists throughout the education system, particularly for Roma and the poor. While Serbia is already making significant improvements in access to preschool, it will be important to prioritize an equitable approach to ensure access to the most vulnerable, including through possible options for private provision and through supporting rollout of the new preschool curriculum to private pre-schools to equalize levels of quality between the two sectors.

Consider introducing school improvement grants – within the framework of a larger school funding reform – linked to equity and school improvement planning and aimed at equalizing resources among LSGs and schools. Currently MoESTD has no mechanism for financially supporting underperforming schools, or for coordinating and tracking local-level spending on education, which would be important for prioritizing equalization mechanisms for LSGs and schools. At the same time, household spending on education differs significantly by income quintile, which is important for social welfare and education. A school improvement grant mechanism could help first and foremost to equalize resources between schools in different geographical areas of the country and different levels of development, promoting greater inclusion and resources at the school level for quality and equity improvement. Increasing capacities of LSGs to manage delegated authorities, including such a school improvement grant scheme, would also be important.

Continue working to close the growing digital divide. The COVID-19 pandemic has highlighted the importance of digital connectivity as an educational resource, yet the digital divide exacerbates existing inequities in the education system – not just in Serbia, but all around the world. Closing this divide with a focus on the most vulnerable children will be critical to prevent equity gaps from widening. Reducing achievement gaps and inequities through development of adjusted scenarios for low-resource contexts and remedial education to compensate for lost instruction time will also be important in parallel with longer-term efforts to close the digital divide.

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ANNEX PRE-UNIVERSITY EDUCATION SECTOR GOVERNANCE – ALLOCATION OF KEY FUNCTIONS

	Management	Financing	Curriculum	Quality evaluation	Professional services
National	<ul style="list-style-type: none"> Strategic steering Selecting and appointing school principals Regulating selection and recruitment of teachers Regulating internal organization of school (in law) 	<ul style="list-style-type: none"> Regulating the financing system Paying salaries of teachers and preschool teachers in preparatory preschool programme 	<ul style="list-style-type: none"> Determining student achievement standards; teaching and learning plans and programmes 	<ul style="list-style-type: none"> Development of quality framework Final examinations School inspection 	<ul style="list-style-type: none"> Steering INSET National development agencies
Regional	<ul style="list-style-type: none"> Intermediary functions between central and school level 	<ul style="list-style-type: none"> Approving number of classes and teachers 		<ul style="list-style-type: none"> External evaluation Professional supervision 	<ul style="list-style-type: none"> Educational advisors Centres for INSET
Local	<ul style="list-style-type: none"> Creation of school/preschool network Participation in school board Coordination of multisector services for inclusive education 	<ul style="list-style-type: none"> Approving local part of school financial plans Funding maintenance costs, teacher professional development, student transport 		<ul style="list-style-type: none"> School inspection (as delegated task) 	
School	<ul style="list-style-type: none"> Daily management Strategic school development Teacher selection and recruitment (conditionally) 	<ul style="list-style-type: none"> Planning, executing and reporting on school budgets Securing additional funds (donations, projects, renting facilities) 	<ul style="list-style-type: none"> Creation of school programme and its execution 	<ul style="list-style-type: none"> Self-evaluation 	<ul style="list-style-type: none"> Professional associates' services



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