



PUBLIC FINANCE REVIEW NORTH MACEDONIA

EDUCATION

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This report was produced by the World Bank team. Core members of the team who contributed to the research and drafting of the report are Bojana Naceva (Senior Education Specialist), Bojan Shimbov (Consultant), and Martin Galevski (Consultant). The team would like to recognize the guidance and support of Rita K. Almeida (Education Practice Manager for Europe and Central Asia), Indhira Santos (Senior Economist and Human Development Program Leader for Western Balkans), Thomas Poulsen (Senior Economist), and Sanja Madzarevic-Sujster (Senior Economist and TTL for North Macedonia Public Finance Review) and is grateful for their helpful comments on drafts of this note. The team is also grateful for the invaluable contributions and feedback from James Graham (Education Specialist), Joana Madjoska (Economist), and Viktor Mitevski (CEO, Association of Macedonian Young Researchers).

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EXECUTIVE SUMMARY

This section of the Public Finance Review (PFR) assesses the level, quality, efficiency, and equity of public spending on education¹ in North Macedonia and recommends policies that could increase efficiency as well as outcomes. It also examines the status of recent education reforms in the country and provides directions that can contribute to a better education system in North Macedonia.

North Macedonia has taken important steps to increase access to all levels of education. Progress is most notable in primary education where enrolment rate is on a path to become universal. However, the coverage of preschool and tertiary education is low by international standards and does not compare favorably with regional peers. Access to preschool education reaches only 42 percent (pre-pandemic), which is far less than the European Union (EU) 2020 enrolment target of 95 percent. This creates learning gaps from an early stage, which could persist through later stages in schooling and life and subsequently deliver unqualified working population. This is worrying because countries with a large proportion of students below proficiency level are likely to lag when those students join the workforce,² meaning that companies will not be able to find suitable candidates for the jobs offered and will have to either invest in retraining or leave the post vacant, thus adding to the persistent unemployment issues in the country.

The quality of education is low and has not improved significantly over the years. The performance of students from North Macedonia in the Programme for International Student Assessment (PISA) testing is unfavorable and below most European countries and regional peers. Approximately half or more of 15-year-olds in North Macedonia fail to demonstrate basic proficiency (Level 2) in science, mathematics, and reading and are considered functionally illiterate. This is far from the EU 2020 target to have no more than 15 percent of students below PISA Level 2.

There are also wide differences in learning outcomes among students from different backgrounds. In the PISA 2018 testing, the learning gap between the top and bottom socioeconomic status groups was equivalent to almost two years of schooling. In Trends in International Mathematics and Science Study (TIMSS) 2019, North Macedonia had one of the highest proportions of students in extreme performance categories (that is, below low benchmark and at or above high benchmark) in both mathematics and science, which points to equity issues. Reversing this trend requires tailored support for the most vulnerable groups of students. This means intervening with appropriate policies and educational practices to identify and work toward reducing the number of students who do not reach minimum competencies. If low-achieving students do not reach minimum competencies early in primary education, they are likely to have less access to higher levels of education, lower labor market participation, and lower future earnings than previous school cohorts.

¹ The TVET education sector is only partially covered in the scope of this analysis.

² OECD. 2014. *PISA 2012 Results: What Students Know and Can Do*. Paris: OECD.

As in most countries in the region, COVID-19 threatens to wipe out the better part of the hard-won human capital gains made over the last decade. The pandemic likely worsened education outcomes, creating unequal opportunities for learning especially for disadvantaged and vulnerable students who face the greatest risk of learning loss. World Bank estimates suggest that such losses could amount to about half a year as measured using learning-adjusted years of schooling (LAYS). Minimizing the potential negative impacts requires targeted policy responses, which, among others, would include putting in place effective diagnostic student assessments, setting up a national tutoring program or catch-up sessions, and setting up teacher training on remedial approaches for weak students.

North Macedonia spends slightly more on education than regional peers but far less than other small EU countries. Between 2010 and 2020, public spending on education as a share of gross domestic product (GDP) declined by one-quarter from 5.1 percent to 4.0 percent. Compared to other small Eastern European countries, North Macedonia spends 1.4 percent less of its GDP on education, and compared to the EU-27 average, the difference is 1 percent. The decline of the share of education spending in overall general government spending is equally high, as it contracted from 14.6 percent in 2010 to 10.4 percent in 2020. Under the tight fiscal constraints created by the COVID-19 pandemic and subsequent energy crises, improving efficiency of spending should be given a priority to ensure that every denar spent delivers the maximum possible value. As the PISA 2018 results show, comparator countries have been able to achieve better learning outcomes with similar or lower levels of expenditure on education. At the same time, in view of the poor educational and overall human capital outcomes, going forward the country may need to consider an increase in spending in some parts of the system to improve outcomes.

The education financing framework in North Macedonia has important gaps when compared to best international practices. Institutional arrangements are complex and lack clear financing criteria. Although municipalities finance only 3 percent of the cost of preprimary, primary, and secondary education, they handle 89 percent of the spending at these crucial levels of education. Moreover, multiyear planning is weak and funding formulas are outdated. There is also limited budget oversight from the central government (CG) and limited corresponding level of accountability from municipalities. The current funding setup undermines the accountability of municipalities to their citizens and also makes it difficult for the CG to assess education performance and the adequate functioning of the system.

Most of the spending in preprimary, primary, and secondary education is for covering salaries, while little is spent on capital investments. Salaries and other staff compensation account for over 75 percent of total spending on preuniversity education, reaching over 80 percent in primary education. At the same time, over 40 percent of the buildings in primary and secondary networks require repair and reconstruction or are dilapidated. Despite this dire situation, capital investments accounted for 4.4 percent of overall spending for preprimary, primary, and secondary in 2018–2021. This is less than the average of 7 percent for regional peers that are at a higher level of development and likely have less immediate needs of reconstruction but still invest more.

Significant pockets of teacher overstaffing exist in primary and secondary education. Decisions on hiring teachers have not followed a consistent economic rationale and have often been politically motivated. Between 2006 and 2019, only 8 municipalities (out of 84) saw an increase in students; at the same time, all municipalities increased teacher staff. Overall, on average, for every 14 students lost, there was one teacher hired. Hence, going forward it will be beneficial to streamline the teacher hiring process and avoid overhiring, thus avoiding further eroding of the already low efficiency of the system.

The current school network is not following demographic and enrolment trends, even in light of the fact that North Macedonia's population is ageing and declining. The projected decrease in enrolment rates in primary education for the next few years suggests that there may be a cost-saving potential and an opportunity for a more effective use of the existing infrastructure. The Government of North Macedonia has already begun working on the optimization of the school network in primary education. The stated objective of the optimization is to harmonize the necessary learning conditions and standards for all children in the country while making efficient use of the financial resources for an educational process of sufficient quality. Both the optimization plan and the planned introduction of new funding formulas across all education levels are big steps ahead for the system in a short time and are anticipated to correct some of the inefficiencies that exist in the system of education financing in North Macedonia.

CHAPTER 1.

BACKGROUND AND OVERVIEW OF THE EDUCATION SYSTEM IN NORTH MACEDONIA

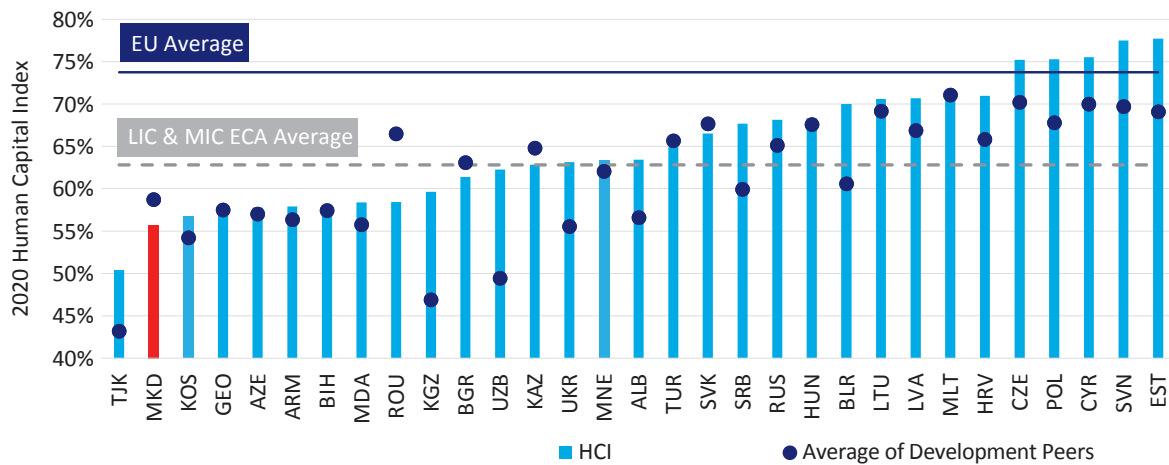
This chapter provides an overview of the state of education in North Macedonia. Section A looks at the state of human capital in North Macedonia, with specific attention to the education sector. Section B presents some of the main characteristics of the education system and outlines the key reforms that have taken place in recent years. Section C discusses the quality of education in North Macedonia with respect to the performance of students on international assessments and highlights the potential learning losses resulting from COVID-19. It also focuses on enrolment trends with respect to all education levels while providing benchmarking with international peers. Section D focuses on participation rates across all education levels and how they compare with peer countries.

A. HUMAN CAPITAL OUTCOMES NEED MORE ATTENTION

North Macedonia aspires to become a middle-class society and realization of this aspiration will be made possible only through human capital development. The Government of North Macedonia knows the importance of human capital for the country's future growth and is strongly committed to human capital investment. Still, while the country has already made important progress in developing its human capacities, much needs to be done to bring human capital to its full potential—an important way is through education.

According to the World Bank Human Capital Index (HCI), between 2010 and 2020, the HCI value for North Macedonia has marginally improved from 0.54 to 0.56 (Figure 1 & Figure 2). This means that a child born in North Macedonia today can expect to attain only 56 percent of her/his full productive potential. This is lower than the average for the Europe and Central Asia region and upper-middle-income countries as well the lowest among Western Balkan countries. Thus, the country still has a long way to go in achieving its aspiration on human capital development.

Figure 1. Lifetime productivity as a future worker of a child born in 2020

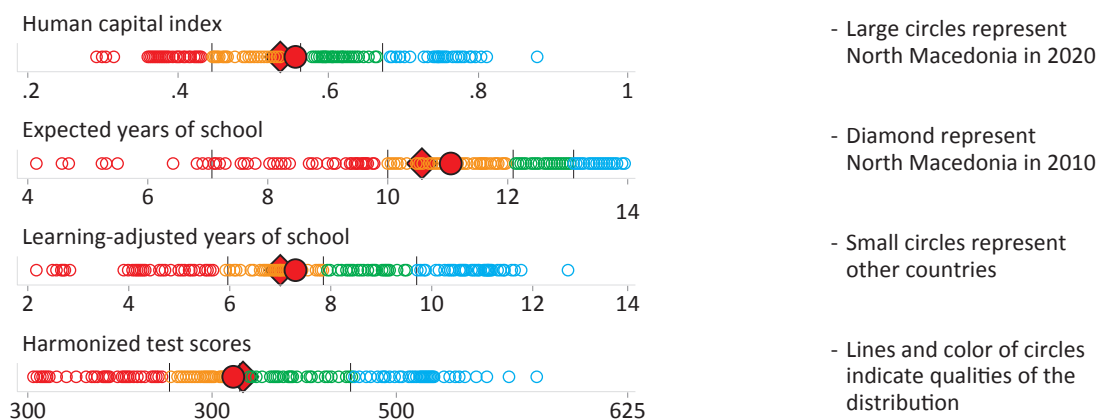


Source: World Bank. 2020. "Human Capital Index."

Note: LIC = Low-income country; MIC = Middle-income country.

Poor educational outcomes largely explain this underachievement in lifetime productivity. As noted in the North Macedonia Systematic Country Diagnostic, deficiencies in human capital in North Macedonia start early and compound over time, from early child development, general education, vocational education and training (VET), and school to work transition to professional development.¹ A child in North Macedonia, who starts school at age 4, can expect to complete 11 years of preprimary, primary, and secondary school by age 18. However, when years of schooling are adjusted for quality of learning (as defined by the LAYS metric²), this is only equivalent to 7.3 years, that is, a learning gap of 3.7 years (Figure 2). This signifies that the gap between years of school and learning is acute in North Macedonia and that there are acute challenges with the quality of the education process in the country.

Figure 2. HCI and education in North Macedonia



Source: World Bank. 2020. "North Macedonia Human Capital Index."

¹ World Bank. 2018. *Seizing a Brighter Future for All: Former Yugoslav Republic of Macedonia Systematic Country Diagnostic*. Washington, DC: World Bank.

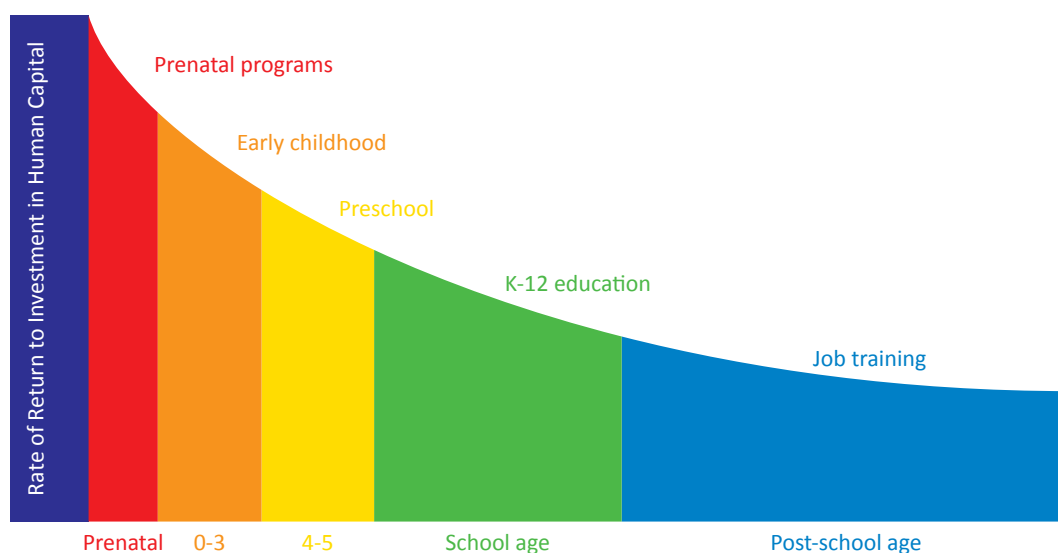
² The learning-adjusted years of schooling is a metric developed by the World Bank whose objective is to compare years of schooling across countries while adjusting those years by the amount of learning that takes place during those years.

There is a need to tackle gaps in learning from an early stage so that they do not persist through later stages in schooling and in life. Findings from multiple international assessments suggest that children who start behind stay behind. The data from PISA 2012 show correlation between attending early childhood education (ECE) and the scores achieved on the PISA tests.³ This makes it clear that closing or preventing learning gaps must start at the beginning, with early childhood development because skills and performance gaps begin early and do not disappear of their own accord.⁴

Box 1. An early investment in children delivers the highest returns

Human capital deficits established early in life are difficult to reverse and often lead to accumulated vulnerabilities later in life. Low ECE enrolments are a serious concern because education benefits are cumulative: children who participate in quality ECE programs later have higher cognitive development and school outcomes (García and Weiss 2017). Because ECE programs impart generic skills and ability to ‘learn how to learn’, it is more difficult and costly for individuals to catch up if they have a disadvantageous start. Among educational investments, ECE offers the highest returns and has strong lifetime and intergenerational benefits that can serve as a way to break out of the cycle of poverty. So, by ensuring that children do not develop gaps in the first place, we reduce learning risks and increase the probability of school retention and lifelong learning success. In this respect, the readiness of children for primary school and their school performance, later on, can be improved through attendance to ECE programs and investment in children’s health.

Return rates of investments in human capital



Source: <https://heckmanequation.org>

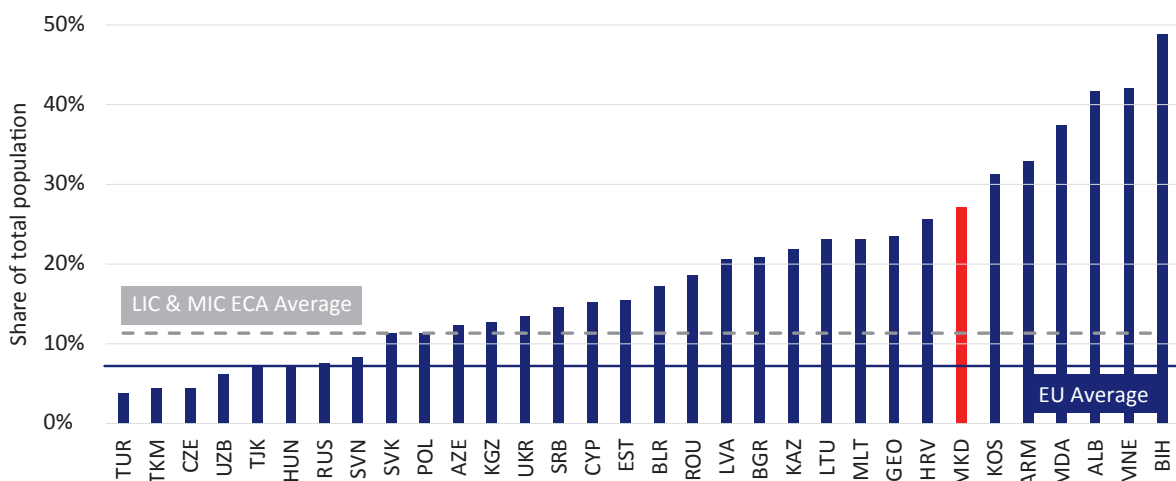
Migration is another driver of human capital loss in the country. The stock of emigration (that is, the share of the population who emigrate out of the country) is almost 30 percent of the total population (Figure 3). Moreover, emigration rates of high-skilled workers are also high. About 20 percent of Macedonian migrants in Organisation for Economic Co-operation and Development (OECD) countries are highly

³ OECD. 2014. *PISA 2012 Results in Focus: What 15-Year-Olds Know and What They Can Do With What They Know*. Paris: OECD.

⁴ García, E., and E. Weiss. 2017. *Education Inequalities at the School Starting Gate: Gaps, Trends, and Strategies to Address Them*. Economic Policy Institute.

educated—the highest rate among the Western Balkan Six (WB6) economies—while 38 percent have low levels of education. The number of tertiary students from North Macedonia in OECD countries has increased by almost three times between 2013 and 2019.⁵ If the trend of migration continues, the human capital loss for the country will be hard to replace and will diminish the country’s potential growth opportunities. A simulation shows that the total education costs of people who leave North Macedonia in one year, depending on the educational level, vary from EUR 116 million to EUR 433 million.⁶ Due to the inability to prevent annual emigration, the potential annual gross value-added loss is estimated at EUR 333 million, which is around 3.1 percent of the country’s GDP. According to the same study, every work-able person who leaves North Macedonia approximately diminishes the potential future GDP by EUR 15,850 each year. Moreover, the combined effect of low population growth and emigration is estimated to have negative consequences on the labor market by decreasing the share of working-age population from 71 percent to 60 percent, and increasing the share of elderly from 12.5 percent to 25 percent.⁷ In addition, as the population ages, there is growing pressure on working-age adults to provide care to their parents and elderly relatives, a task that often falls to women and has negative consequences on their employment.

Figure 3. Emigration stock in North Macedonia



Source: KNOMAD database. Data for 2017.

To systematically address these challenges, the Government of North Macedonia is in the process of adopting a Human Capital Strategy that presents an opportunity to promote greater human capital accumulation. The strategy proposes an ambitious shift, requiring significant reforms and investment in education, health, and social protection. It highlights that reforms need to take place in several domains, including (a) improving the quality of services (education, social protection, and health), (b) putting greater focus on equitable delivery and the needs of vulnerable population groups, (c) increasing spending levels and making spending more efficient, and (d) improving the resilience capacity of human capital sectors by learning from the COVID-19 response. Moving forward, it will be important for the Government to establish a clear

⁵ OECD. 2022. *Labour Migration in the Western Balkans: Mapping Patterns, Addressing Challenges and Reaping Benefits*. Paris: OECD.

⁶ Westminster Foundation for Democracy. 2019. *The Cost of Migration in North Macedonia*. Skopje: Westminster Foundation for Democracy.

⁷ World Bank. 2018. *Seizing a Brighter Future for All: Former Yugoslav Republic of Macedonia Systematic Country Diagnostic*.

division of responsibilities and a coordination mechanism across the key human capital ministries to achieve the objectives defined in the strategy.

B. EDUCATION SECTOR OVERVIEW AND REFORM DYNAMICS

The average student in North Macedonia attends 11–13 years of compulsory education, which is in line with other countries in Europe and is the highest among regional peers (Table 1). This duration consists of nine years of compulsory primary education (typically starting at the age of 6) and up to four years of compulsory secondary education depending on the type of study program followed during upper secondary education. The education system is predominantly public, with the vast majority of students attending public institutions. The expansion of the private sector is most pronounced in tertiary education where it catered for 15.5 percent of students in 2021.⁸

Table 1. Entrance age and duration of compulsory education, 2020–2021

Country	Entrance age	Duration
Serbia	5.5	9
Albania	6	9
Bosnia	6	9
Montenegro	6	9
North Macedonia	5.6	11–13
Bulgaria	5	11
Slovenia	6	9
Croatia	7	8
Slovakia	6	10
EU average	—	10

Source: Eurydice 2020;⁹ Word Bank 2021.¹⁰

There are a number of public institutions responsible for different aspects of the education system. The Ministry of Education and Science (MoES) is the main governmental body responsible for planning, coordinating, and implementing educational policies. An exception to this is preprimary education which is under the auspice of the Ministry of Labor and Social Policy (MLSP), while MoES plays an oversight role in setting the curriculum. Several subordinate public institutions also operate in the education sector:

- (a) The Bureau for the Development of Education (BDE) is a body of the state administration subordinated to MoES, responsible for curriculum development, research and development, and promotion of the best practice models and approaches in preuniversity education as well as accreditation of the training providers and programs for teacher professional development and monitoring of their execution.

⁸ https://www.stat.gov.mk/pdf/2021/2.1.21.25_mk.pdf.

⁹ Eurydice. 2020. *Compulsory Education in Europe – 2020/21. Eurydice Facts and Figures*. Luxembourg: Publications Office of the European Union.

¹⁰ <https://data.worldbank.org/indicator/SE.COM.DURS?locations=EU>

- (b) The State Education Inspectorate (SEI) is a legal entity under the MoES jurisdiction responsible for supervision over the implementation of the education-related legislation as well as quality control of the education process at all levels.¹¹
- (c) The National Examination Center (NEC) is mainly responsible for organizing and providing different types of assessments of students (such as the national assessment and state Matura exams) including international assessments (such as PISA and TIMSS). In addition, it provides training, assessment, and certification of principals (candidates for principals) of educational institutions.
- (d) The Vocational Education and Training Center (VETC) is tasked to provide analysis and research in the system of VET, development of occupational standards, development of standards for vocational qualifications and curricula, teachers' training, counselling and mentoring, and international cooperation and support to social partnership.
- (e) The Agency for Quality in Higher Education (AQHE) as an independent body that evaluates the quality of universities and accredits academic programs;
- (f) The Center for Adult Education (CAE) is responsible for promoting and coordinating adult education and ensuring quality particularly through establishment of standards and criteria for formal and nonformal adult education.

North Macedonia's education sector underwent important systemic reforms over the last two decades. The country has invested in creating a stronger pedagogical framework and a more relevant curriculum in the preuniversity education. To increase the quality of ECE, in 2009 the MLSP launched the Standards for Early Learning and Development (SELD) and in 2015, together with the BDE, prepared and adopted a Program for Early Learning and Development (PELD). In primary education, to improve the conditions for learning, North Macedonia recently introduced a New Concept for Primary Education. The main features of the New Concept include (a) modularization of the curriculum based on interdisciplinarity rather than subject-based learning, (b) a student-centered curriculum that provides greater choices for learning and a more individualized learning experience, and (c) increasing of the capacity of education institutions to design and implement digital pedagogy whether online or in person in the classroom. In secondary education, a reform has been undertaken to improve the quality and labor market relevance of three- and four-year vocational programs by expanding work-based learning and introducing a modular curriculum that promotes the development of transferable skills.

Reforms needed to modernize quality assurance mechanisms have also begun. In preprimary education, with the support of the World Bank, the MLSP is introducing a new quality measurement tool based on the Measuring Early Learning and Quality Outcomes (MELQO) instrument,¹² which is expected to substantially increase the available data on children's development in the country as well as the quality of interactions in the classrooms. Moreover, as part of the World Bank-financed Primary Education Improvement Project (PEIP), the Government recently adopted a Concept

¹¹ The SEI inspects preprimary institutions in the early learning and development program aspect only as well as universities in terms of implementation of legal provisions.

¹² For more information on the MELQO, see <https://unesdoc.unesco.org/ark:/48223/pf0000248053> and <https://blogs.worldbank.org/education/measurement-missing-puzzle-piece-early-childhood-education-north-macedonia>.

for National Assessment to guide the development and conduct of the National Assessment Program (NAP) in primary grades and a new proposed concept for the Matura leaving examination in secondary education. In tertiary education, the country is also setting up and consolidating its higher education quality assurance system. In 2020, under the new Law on Higher Education, the AQHE began its operation and strives toward full membership in the European Association for Quality Assurance in Higher Education (ENQA), thus bringing quality assurance to the system through evidence-based process reviews carried out by independent experts.

In addition to the efforts addressing the issue of low quality, North Macedonia has taken several steps to tackle the problem of equity in access to learning. With support from the World Bank Social Services Improvement Project (SSIP), the Government has committed to expand the preschool network, particularly for children from socially disadvantaged backgrounds (that is, poor children, children with disabilities, and Roma children). The project will result in approximately 2,000 new preschool spaces in both rural and urban areas through a combination of new construction, extension of existing preschools, and repurposing or upgrading of other public buildings such as primary schools (or other buildings available in the municipality). Furthermore, the new Law on Primary Education provides guarantees for this level of education to be free for all children ages 6–14 and for access of each child particularly through provision of free textbooks and free transportation for those with a permanent residence at least 2 km away from the nearest school. In secondary education, on top of these measures, since 2009 the Government offers scholarships and tutoring for Roma students as well as for students from other socially vulnerable groups. The new Law on Child Protection from 2019 also paved the way for interventions aiming at improving the attendance and completion rate of vulnerable children. It introduced an education allowance and a reformed child allowance as part of the new social assistance scheme for vulnerable households with a child in primary or secondary education.¹⁵ In higher education, the Law on Higher Education stipulates the right of the Government to set admission quotas reserved for students from non-majority communities.

North Macedonia has recently approved a new law on teachers.¹⁴ The law introduces four categories of the teacher (trainee, teacher, mentor, and adviser); distinguishes the professional competencies associated with each of these categories in terms of knowledge, skills, and values; and presents the new professional development model that is to be put in place. Aspects of this law have started to be enacted and the country has started to develop a more robust system for teacher selection, assessment, professional development, and promotion. However, such efforts need to be sustained in practice so that the right incentives are in place to attract and retain highly effective teachers, including the regular provision of the mandated training and remedial measures in cases of poor teaching performance. Increasing the opportunities and quality of teacher training and professional development should also be part of this effort.

Despite the reforms, schools and school-level actors are not yet in a position to play a central role in implementing reforms to improve learning. Since 2008, schools in North Macedonia have been required to undertake self-evaluations every

¹⁵ According to the Law on Child Protection, the right to education allowance is exercised if the child is enrolled as a full-time student in primary or secondary school. The right to education supplement is conditional on the child attending at least 85 percent of the total number of realized teachers hours and not using the education supplement for the same school year.

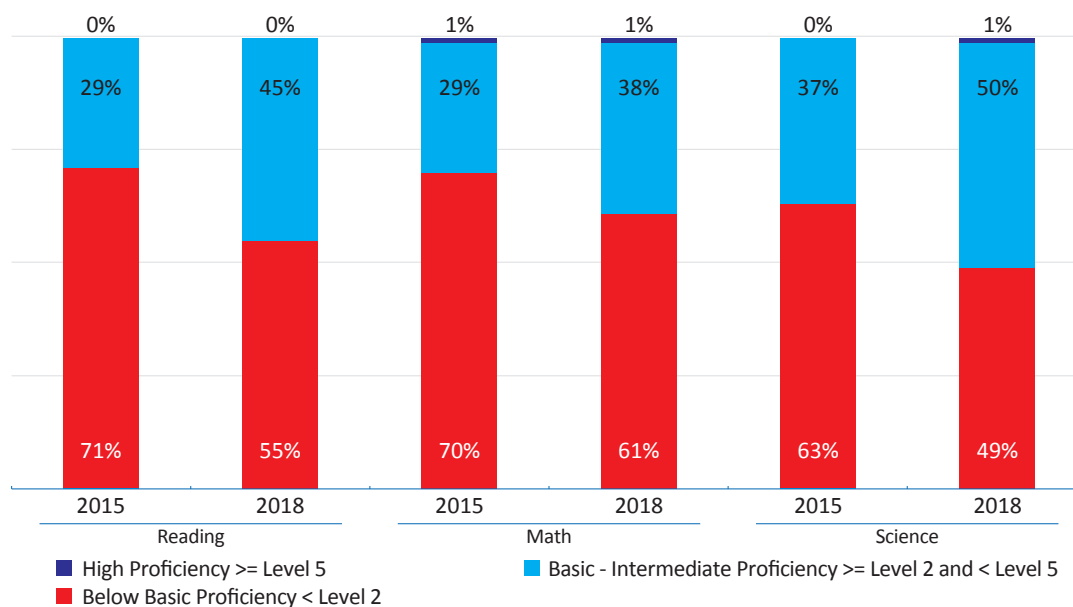
¹⁴ Law of Teachers and Schools' Multi-professional Support Teams, Official Gazette of Republic of North Macedonia, no.161, August 5, 2019.

two years, though this process is still not contributing to quality enhancement. Both external and self-evaluations focus primarily on compliance with regulations and administrative processes, and the evaluations do not currently provide sufficient feedback on how to improve learning and teaching practices. Moreover, MoES and its agencies need to provide further support and training to schools for improving the quality and relevance of these self-evaluations so that they support school improvement planning. The 2019 Law on Primary Education has established new rules to elect school principals in an effort to eliminate political appointments and interference in decision-making from the municipality, with greater responsibility allocated to school boards. Although schools now have a higher level of autonomy, most of them operate in far from ideal circumstances and have not yet recognized that they are—or should be—the primary institutional agent for change. This is a critical challenge given that inadequate management and planning at the school level undermines school quality and prevents the addressing of pressing challenges, such as those related to the ongoing COVID-19 epidemic (or other unforeseeable events).

C. QUALITY IS LOW AND LAGS BEHIND REGIONAL PEERS

The quality of education is low, and even though there has been some improvement over the years, the outcomes are far from satisfactory. In the PISA 2018 testing, while the country has improved its results from 2015, the performance of learners remained below the EU average score and all the countries of the World Bank region (except Kosovo). Approximately half or more of 15-year-olds in North Macedonia failed to demonstrate basic proficiency (Level 2) in the three domains of science, mathematics, and reading and are considered functionally illiterate (Figure 4). This is far from the

Figure 4. Student performance proficiency¹⁵

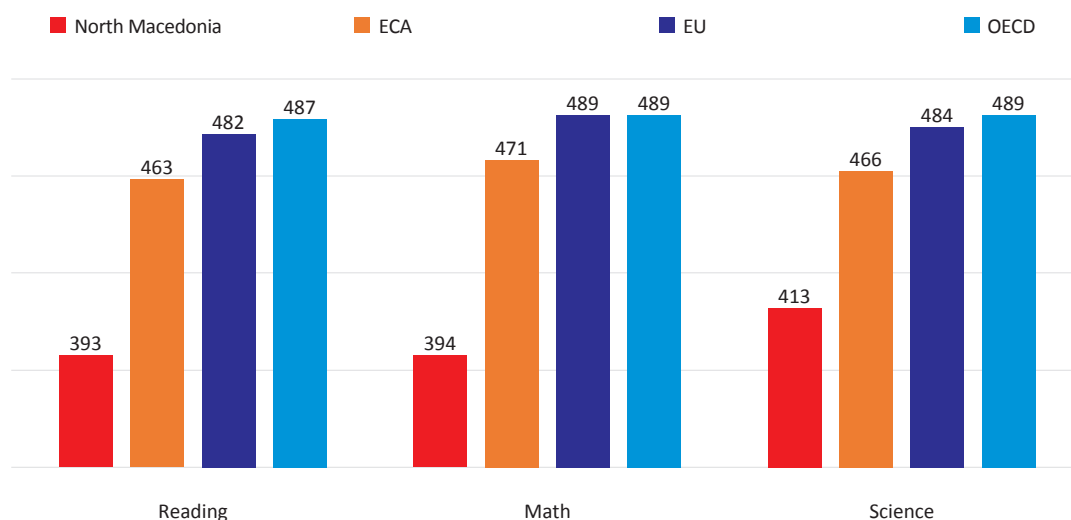


Source: PISA 2018 data.

¹⁵ Level 2 is the baseline level of proficiency at which students begin to demonstrate the competencies that will enable them to participate effectively and productively in life as continuing students, workers, and citizens.

EU 2020 target to have no more than 15 percent of students below PISA Level 2. Of all test-takers in North Macedonia, less than 1 percent of students were high achievers (Level 5 and Level 6). This is worrying because countries with a large proportion of students below proficiency averages are likely to lag when those students join the workforce,¹⁶ meaning that companies will not be able to find suitable candidates for the jobs offered and will have to either invest in retraining or leave the post vacant, thus adding to the persistent unemployment issues in the country. Furthermore, the performance of students from North Macedonia in the PISA testing is unfavorable and below most European countries and regional peers (Figure 5).

Figure 5. Results on PISA 2018 compared to peers

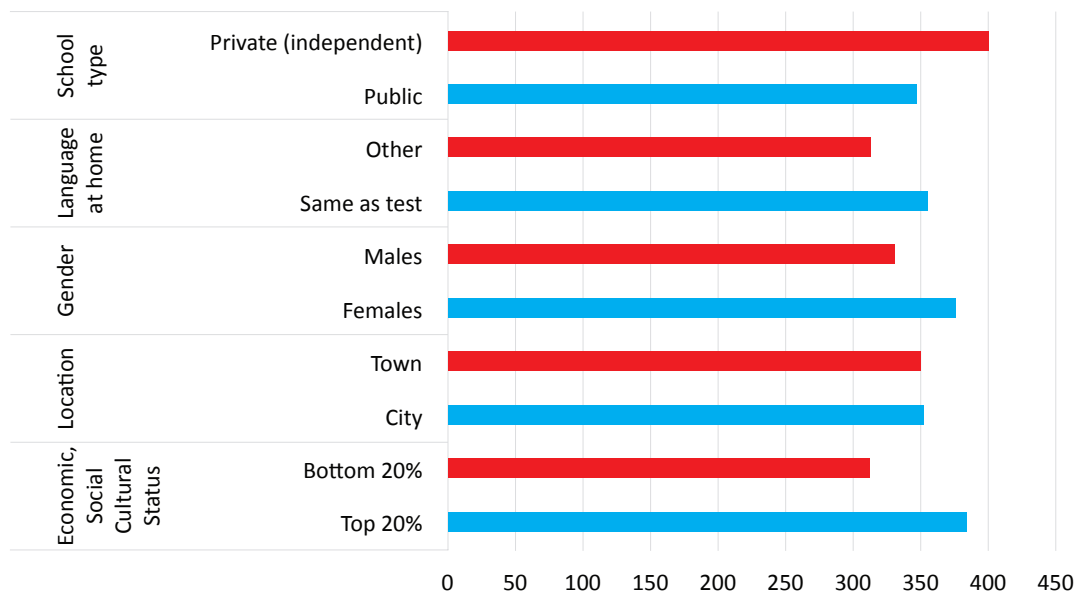


Source: PISA 2018 data.

Moreover, there are considerable equity issues, as there are also wide differences in learning outcomes among students from different backgrounds. In the PISA 2018 testing, the learning gap between the top and bottom socioeconomic status groups was equivalent to almost two years of schooling (Figure 6). Differences among public and private schools are also wide, as private schools outperform public by over one year of schooling (measured through learning outcomes). Moreover, gender disparities are also significant, as girls outperform boys by an equivalent of one year of schooling. Similar conclusions can be drawn using TIMSS 2019, as significant differences in performance between students are evident based on (a) the place of living (students from rural areas scoring 36 points less in mathematics and 50 points less in science compared to students from urban areas); (b) the language of the test-taker (students taking the test in Macedonian language score 24 and 39 points more in mathematics and science, respectively, compared to students taking the test in Albanian language); and; (c) resources for learning at home (students with many learning resources outperform students with only few learning resources by almost 150 points in both mathematics and science). When North Macedonia is compared to the other countries in the region, alongside Kosovo and Montenegro, it has one of the highest proportions of students in these extreme performance categories (that is, below low benchmark and at or above high benchmark) in both mathematics and science, which points to equity issues.

¹⁶ OECD. 2014. *PISA 2012 Results: What Students Know and Can Do*. Paris: OECD.

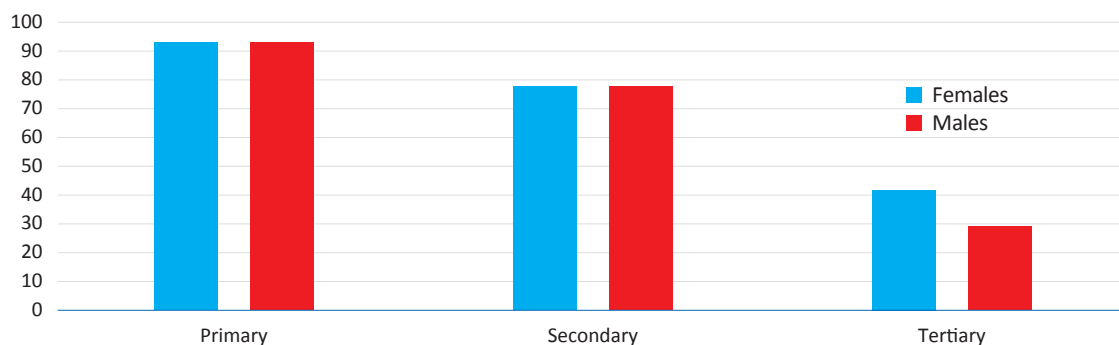
Figure 6. Equity profile in PISA 2018 outcomes



Source: Based on PISA 2018 and World Bank staff own elaboration.

Girls are not able to capitalize on their obtained skills and have difficulties in transitioning to the labor market. Girls are overrepresented in school enrolment at all levels but are then underrepresented in the labor market. In all levels of education, particularly higher education, enrolment rates of female students are higher than those for male students (Figure 7). Nevertheless, labor market outcomes show significant disadvantages for women. North Macedonia has the second highest unemployment rate in the Western Balkans, and unemployment is especially concentrated among women and minorities. While the total employment rate is close to the average of Western Balkan countries, women have drastically higher inactivity (55.1 percent in 2021 compared to 37.3 percent for men¹⁷). Family responsibilities, lack of available or affordable childcare, and social norms contribute to the high inactivity of women in the country. The employment gap between men and women was 17.9 percent in 2021, with only 38.3 percent of working-age women employed compared to 56.2 percent of men. Estimates from other countries show that these gender gaps in the labor market could generate a loss of about 16 percent of GDP each year.¹⁸

Figure 7. Gross enrolment rates by gender and education level (average 2017–2021)



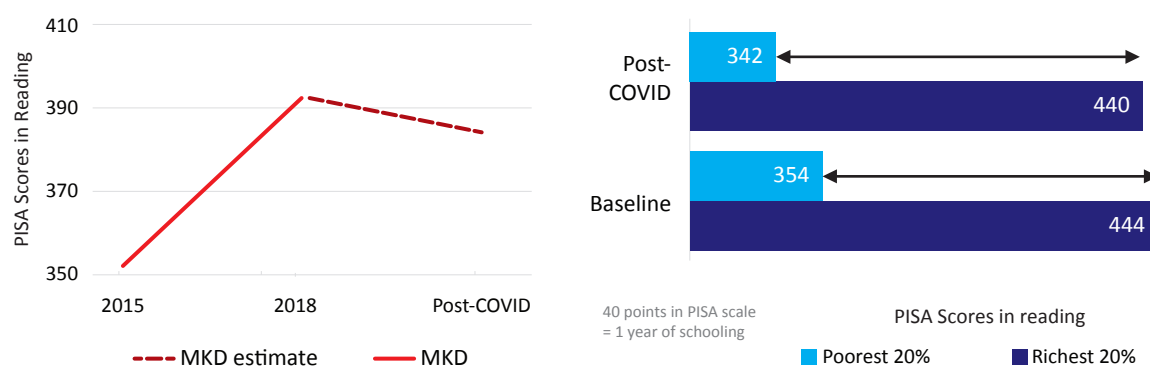
Source: State Statistics Office and World Bank staff own elaboration.

¹⁷ Age 15+.

¹⁸ Cuberes, D., and M. Teignier. 2016. "Aggregate Effects of Gender Gaps in the Labor Market: A Quantitative Estimate." *Journal of Human Capital* 10 (1): 1–32.

As in most countries in the region, the COVID-19 pandemic and its fallouts have threatened to wipe out the better part of the hard-won human capital gains made over the last decade. As in many countries, the Government of North Macedonia reacted to the pandemic by closing schools and moving to online learning. Nevertheless, as the education system was not prepared for this kind of learning, the process was slow to start and not well coordinated, particularly for the upper years of education, leading to deficiencies and difficulties for students and teachers alike. The pandemic likely worsened education outcomes, creating unequal opportunities for learning, especially for disadvantaged and vulnerable students who face the greatest risk of learning loss. World Bank estimates suggest that such losses could be in the order of a 6- to 10-point decline¹⁹ for the mean PISA score for North Macedonia (393 in 2018) (Figure 8). This translates to a learning loss of about half a year as measured using LAYS.

Figure 8. Estimates of COVID-19 impact on learning loss for North Macedonia



Source: Based on PISA 2018 data and World Bank staff calculations.

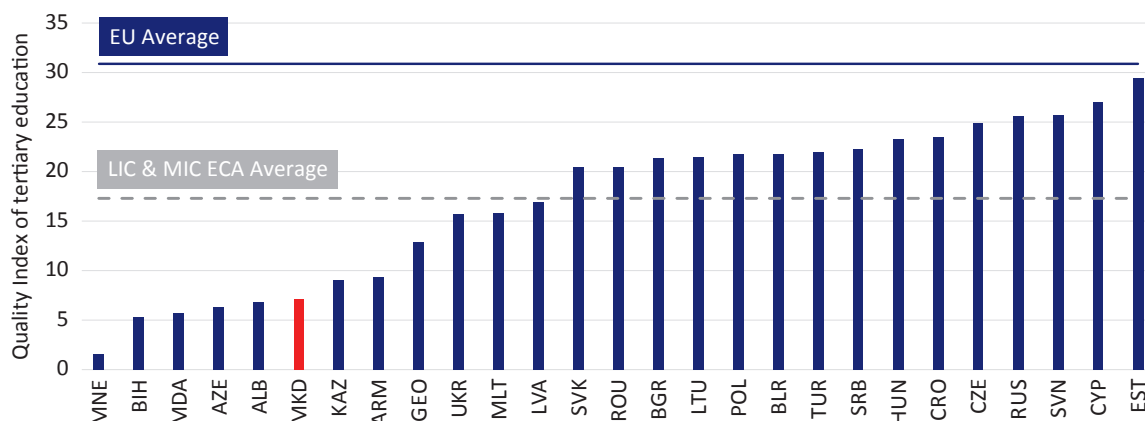
Using PISA 2018 reading scores, the average learning in the Western Balkans would drop by an estimated 16 PISA points under the scenario that schools were closed for four months and that there was no remote teaching during that time. In the scenario where schools were closed for four months but with remote teaching in place, and under the assumption that remote teaching is not as effective as face-to-face teaching, on average, learning drops by about 9 PISA points in the short term. For North Macedonia, in the first scenario the drop is equal to the regional average (16 PISA points), while in the second scenario the drop is 1 point lower than the regional average (8 PISA points).

In tertiary education, the Higher Education Quality Index in North Macedonia is one of the lowest compared to peer countries (Figure 10). This low performance can be attributed to several factors, including (a) the lack of favorable institutional governance structures in universities that would encourage strategic vision, innovation, and flexibility and enable institutions to make decisions and manage resources without being encumbered by bureaucracy and (b) an accountability framework which is not sufficiently robust to allow for appropriate quality assurance. At both system-wide and institutional levels, the mechanisms for quality assurance are underdeveloped and a 'quality culture' is yet to be built.²⁰

¹⁹ World Bank. 2020. North Macedonia Country Brief: Estimate of COVID-19 Impact on Learning Loss. Washington, DC: World Bank.

²⁰ Salmi, J. 2017. "Modern Governance for the Macedonian Universities: International Trend and Reform Options." Prepared for the Macedonian Ministry of Education and Science.

Figure 9. Higher education quality index²¹



Source: World Bank ECA Fall 2020 Economic Update.

Note: Averages are population-weighted. LIC and MIC do not include Russia. Data for 2019

Box 2. Education quality matters

The quality of the education provided matters significantly, especially for children from disadvantaged backgrounds. It is important not only to go to school but also to learn skills that are in demand in the labor market. Literacy, for instance, is extremely important: 1 standard deviation more on the literacy scale is associated with an increase in the probability to be employed by 0.8 percentage points (pp) and with a 6 percent increase in wages.²² Quality of higher education is also extremely important: in fact, in some countries the quality of some universities may be so poor that their students would have been earning more if they would not have attended them and would have started working right away.²³

D. ACCESS TO EDUCATION IS IMPROVING, BUT SIGNIFICANT GAPS STILL REMAIN

Access to education has improved over the years, especially in preprimary and tertiary education and at all levels for specific minorities. However, there is still a wide gap in coverage compared to other countries in the region and the EU average (Table 2). Preprimary enrolment has seen an expansion, from 26 percent in 2010 to 42 percent in 2020. Despite efforts to improve the coverage in recent years, preprimary enrolment is still low in comparison to the EU 2020 target of 95 percent of children enrolled in preschool education (starting at age 4). Access to preprimary education is particularly uneven for Roma children, reaching only 4 percent. In addition, less than 10 percent of children in the poorest quantile attend preprimary school compared to

²¹ Note: The standardized quality score for higher education was calculated in the following way: quality scores coming from each of the six university rankings (the Times Higher Education, the Quacquarelli Symonds, the Academic Ranking of World Universities, the Center for World University Rankings, the US News Global Universities Ranking, and U-Multirank) were first standardized to a global mean of 0 and a standard deviation of 1 and then averaged for every country. This value was then rescaled to range from 0 to 100.

²² OECD, 2016. "Skills matter: further results from the survey of adult skills." Paris: OECD.

²³ González-Velosa, C., Rucci, G., Sarzosa, M., Urzúa, S. 2015. "Returns to Higher Education in Chile and Colombia.", IDB Working Paper Series, No. IDB-WP-587, Inter-American Development Bank (IDB), Washington, DC.

more than 50 percent of the wealthiest children. As mentioned above, the lack of access to ECE, and to childcare more generally, is an important reason why few women participate in the labor force in North Macedonia.²⁴ Low levels of preprimary enrolment also mean that there is an uneven playing field, with many children entering primary school without basic literacy and numeracy skills. In the long term, such low coverage and inequity, if unaddressed, could entrench poverty and inequality. Primary enrolment is nearly universal and secondary enrolment is above 80 percent, but the rate of students with disabilities or from certain minorities who miss out on schooling or drop out remains considerable. The difference in coverage compared to peer countries is also pronounced in tertiary education where the gross enrolment rate of 43 percent is still far behind enrolment rates in the region and the newer EU member states.

Table 2. Participation in education gross enrolment

	pre-primary	primary	secondary	tertiary
Albania	80	107	95	55
Bulgaria	79	87	97	72
Croatia	69	95	100	68
Latvia	88	104	108	74
Lithuania	95	100	109	93
North Macedonia	42	98	80	43
Serbia	69	100	90	56
Slovakia	62	100	95	67
Slovenia	97	100	91	45
EU average	92	102	114	77

Source: Eurostat and World Bank staff own calculations.

Over the last decade, the gender structure of female and male students in primary and secondary has been in favor of female students. The number of female students who are continuing their education from primary to secondary level is increasing, while the number of male students is decreasing. Only 1 percent of pupils drop out of primary and secondary education, which applies to both males and females; however, the number of out-of-school children is very high, as explained in Chapter 3. In tertiary education, however, the structure is changing, with more female students enrolling in university. The number of female students enrolled in and graduating from the first, second, and third cycle of studies is generally higher in social sciences, humanities, and medical sciences, while for technical and technological sciences the number of female students is lower in comparison with male students.²⁵

²⁴ European Centre for Social Welfare Policy and Research. 2021. "Performance of Western Balkan Economies Regarding the European Pillar of Social Rights: 2021 Review of North Macedonia." Regional Cooperation Council.

²⁵ <https://www.stat.gov.mk/publikacii/2021/Gender%202021.WEB.pdf>.

CHAPTER 2.

OVERVIEW OF EDUCATION FINANCING AND SPENDING IN NORTH MACEDONIA

This chapter provides an overview of education financing and spending in North Macedonia. Section A outlines some of the main characteristics of the education financing system, focusing on the governance setup for financing and the limitations of the current funding formulas. Section B presents the distribution of education financing across education levels as well as comparison with regional peers. Section C focuses specifically on the impact of COVID-19 on education spending.

A. GOVERNANCE OF THE EDUCATION FINANCING SYSTEM

North Macedonia's educational system is partially decentralized, with its two levels of government sharing responsibility. Decentralization was designed in two phases: first, assets were transferred from the central government (CG) to local governments (LGs) along with the associated maintenance costs (for example, heating, energy, materials, and services), and property rights for school buildings, land, and equipment were also transferred. In a second phase, the management of human resources and their costs were also transferred to LGs. At that point, the LGs became free to adjust human resources and maintenance costs according to their needs. The management of preprimary, primary, and secondary schools is now the responsibility of municipalities, and the CG focuses on tertiary education, though it retains responsibility for capital investments in preprimary, primary, and secondary schools.²⁶ Nevertheless, municipalities do not yet have a capacity that matches the assigned responsibilities and have not fully assumed their role as equal partners with shared rights and responsibilities in the education process and its outcomes but rather act as an 'intermediary' in the transfer of funds from central to local level.

Although municipalities finance only 3 percent of the cost of preprimary, primary, and secondary education, they handle 89 percent of the spending at these crucial levels of education. In 2020, the CG provided 97 percent of the 4 percent of GDP allocated to education. Out of the overall spending in preuniversity education, the CG

²⁶ Maintenance of the assets is assigned to LGs.

provides most of the funds, but it directly manages only 11 percent of them dedicated for the delivery of special education in primary and secondary schools which falls under the responsibility of the CG, and the remaining part is managed by LGs.

The current funding setup undermines the accountability of LGs to their citizens and also makes it difficult for the CG to assess education performance and the adequate functioning of the system. The current system of delegated functions is set to ensure minimum standard in terms of equity by providing a minimum finance through block grants. However, this should also mean that the CG funding comes with some strings attached. But currently, there are too few strings attached and LGs have no obligation to disclose the criteria and standards which they use to decide on the distribution of funding to schools. Other than monitoring that the funds are spent on the specified sector, there is no follow-up by any CG unit (including MoES) on how efficiently these funds are spent. This leads to oversight deficiencies by MoES and lack of incentives for the LGs to adjust the school network as the financing is already secured from the CG. Thus, going forward LGs and MoES should work hand in hand on improving the institutional setup and streamlining the functional responsibilities in education, including optimization of the school network (Chapter 3 - Section C provides more on the optimization of the school network). Ideally, this should be part of a broader process of reforms in the intergovernmental decentralization setup as some aspects go beyond just the education process.

There is evidence that the formula allocations are affected by staffing levels rather than by enrolment parameters. As the CG is obliged to ensure funding for all approved teaching positions in schools, the budgeting process seems to work backwards.²⁷ First, salary costs for teachers are estimated and negotiated between MoES and the Ministry of Finance (MoF). Then, MoES sets the lump sum and the per-student standard as well as the upper and lower buffer in a way that ensures that all LGs can cover at least the salary costs for teachers. Moreover, there is low transparency in allocation which stems from the lack of clarity in the ordinance governing the process which does not specify the numerical values of the main parameters of the formula: the lump sum size, the per-student standard, and the upper and lower buffer, as well as the methodology for determining the limits of the buffers.

The funding formula for tertiary education is also outdated, nontransparent, and de facto not in use. The funding formula for tertiary education was introduced back in the 1980s and defined as an input-based formula linked mainly to the number of students, with specific standards and criteria to determine the various components of the budget.²⁸ However, the funding formula was applied in a rigid and nontransparent manner. Since the number of academic positions was considered to be fixed, changes in the actual number of students did not automatically result in budget increases. Moreover, the funding formula has not been adjusted over time and as a result, many of the weights and coefficients used in the formula are outdated and do not represent the actual cost structure of the universities. Furthermore, as funding for universities

²⁷ The municipal finance law—Article 12 (3)—includes a status quo provision: the amount of the block grant may not be less than the amount spent by the Government on education in each jurisdiction in the year before decentralization.

²⁸ The formula includes a complex process considering the approved study programs in the various tertiary education institutions, the number of courses and departments, the number of full-time students enrolled for the first time under the state quota in each academic year, the qualification structure of the academic staff, the number of graduating students who graduate, the infrastructure of the universities, and the number of administrative personnel needed.

became scarce, the Government stopped using the formula altogether. Thus, today the budget allocation for universities reflects historical trends and the negotiating power of each sector in relation to MoES and MoF.

MoES, in coordination with other institutions involved in the education process, designed new funding formulas (from preprimary up until higher education), which offer a solid opportunity for addressing the existing shortcomings, but their implementation has been postponed, beyond the planned 2022/2023 school year. Once put to use, the new funding formulas are expected to increase efficiency, reward good performance, and ultimately contribute to better quality. Introducing incentive structures (financial and nonfinancial) within the new funding formulas can be an effective way to steer reform processes and get them more easily institutionalized. Reforming the system of financing can also make education institutions and LGs more accountable to the communities they serve and ultimately be beneficial for the overall education quality.

Finally, full transparency should be ensured in the design and operation of all funding mechanisms (policy objectives sought, rules and procedures for resource allocation). This process is also related to an overall change in governance: instead of steering via detailed legislation, the Government (in the education sector MoES) can steer through reformed funding mechanisms, which have autonomous and accountable institutions, such as the LGs, as a precondition. Further, it can also enhance the strategic dialogue between the CG and other stakeholders in the education process (institutional ones such as the LGs and noninstitutional) as well as contribute toward the realization of national policy objectives.

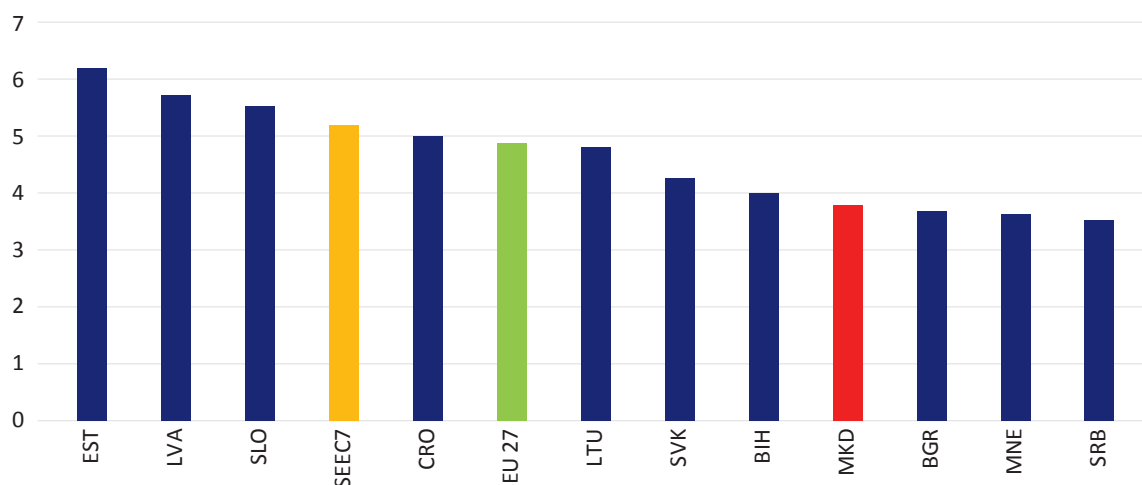
B. SPENDING ON EDUCATION IS LOW AND DECLINING

A comparative analysis of spending on education as a share of GDP reveals that North Macedonia spends slightly more than regional peers but far less than other small EU countries (Figures 10 and 11). Between 2010 and 2020, public spending on education as a share of GDP declined by one-quarter, from 5.1 percent to 4.0 percent. Compared to other small Eastern European countries²⁹, North Macedonia spends 1.4 percent less of its GDP on education, and compared to the EU-27 average the difference is 1 percent. The decline of the share of education spending in overall general government spending is equally high, as it contracted from 14.6 percent in 2010 to 10.4 percent in 2020. In view of the poor educational and overall human capital outcomes, the country may need to consider an increase in spending to improve outcomes; however, it is vital to first strengthen the efficiency of spending in the system to derive the full benefits of these investments (for more details on efficiency of spending, see Chapter 3).³⁰

²⁹ The seven small eastern European countries are Bulgaria, Croatia, Estonia, Latvia, Lithuania, Slovenia, and Slovakia.

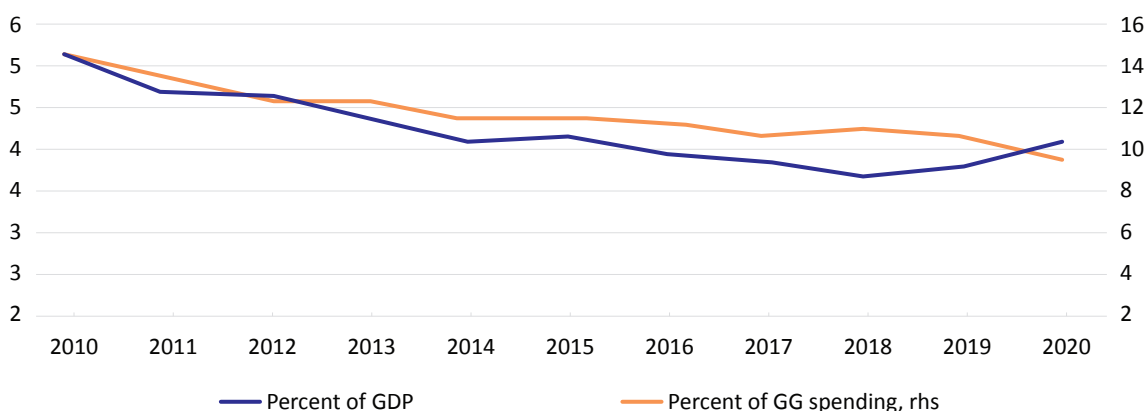
³⁰ Current concepts and practices of PFM do not identify the development of human resources as an investment in the accumulation of human capital but consider it as current spending (wages and salaries, goods and services, and maintenance), more akin to consumption and considered less productive than the capital spending on infrastructure. Thus, a focus on the human capital approach would reorient policy choices toward identifying and prioritizing specific categories of current spending contributing to the accumulation of human capital, given how crucial it is for the long-term economic and social development.

Figure 10. General government spending/education spending as % of GDP (average 2018–2020)



Source: Eurostat, national authorities, and World Bank staff own calculations.

Figure 11. Education spending as % of GDP



Source: MoF and World Bank staff own calculations.

Box 3. Investment in education, when efficient, can trigger economic growth

It is well established in the education literature that investments in education, especially in basic education, when done in a proper way and targeted to the main bottlenecks have high social returns and can trigger higher rates of economic growth.³¹ Nonetheless, the literature also shows that higher levels of education investments do not warrant better education. Available studies, for example, indicate that the median school in OECD countries could improve learning outcomes by 22 percent using the same amount of available resources.^{32 33} Differences in efficiency of spending across schools and school districts have often been attributed to differences in governance and management practices.³⁴ Governments face the challenge of spending the adequate level of resources on education effectively and efficiently at the local level.

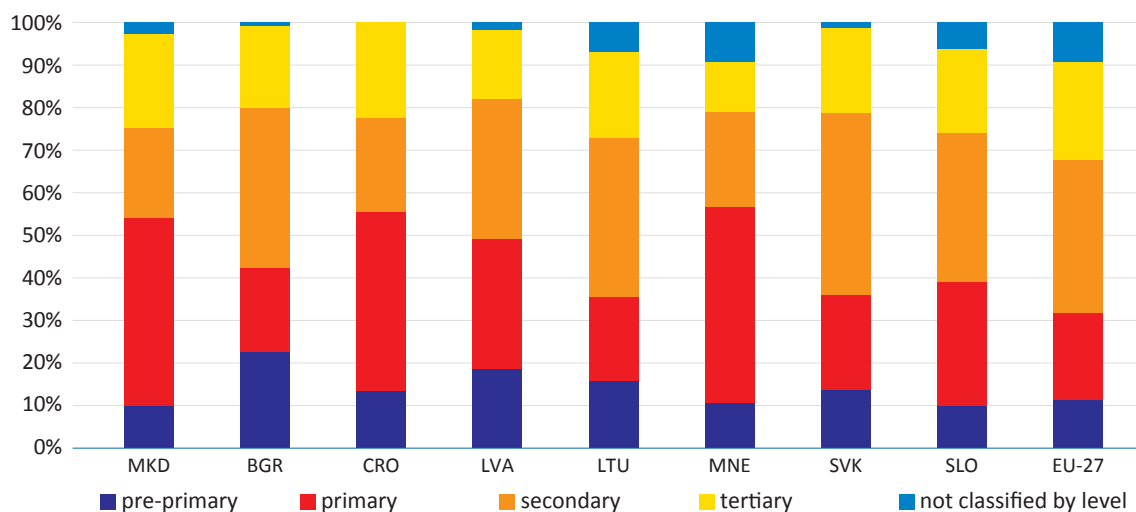
³¹ Hanushek, E. and Ludger W. 2008. "The Role of Cognitive Skills in Economic Development." *Journal of Economic Literature*, 46 (3): 607–668.

³² Kocak, H. and Ahmet M. 2011. "Efficiency Analysis of OECD Public Education Spending." Turkey: Marmara University.

³³ Sutherland, D., Price, R., Joumard, I. and Chantal N. 2007. "Performance indicators for public spending efficiency in primary and secondary education". OECD Economics Department Working Paper No. 546.

³⁴ Gupta, S. and Marijn V. 2001. The efficiency of government expenditure – experiences from Africa. *Journal of Policy Modelling*, 23: 433–467.

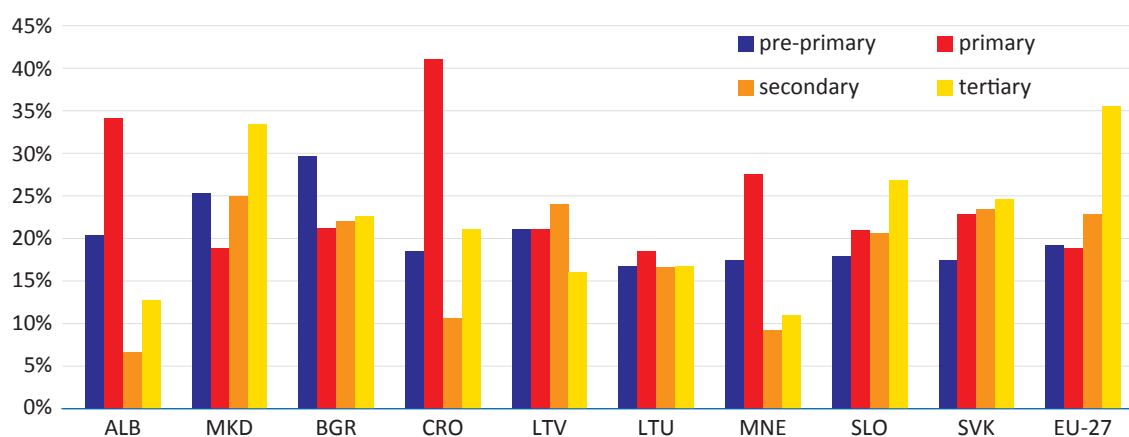
Figure 12. Public education spending by level, 2018



Source: Eurostat, national authorities, and World Bank staff own calculations.

Nevertheless, the intensity of spending (that is, spending per student) is not well aligned across education levels and municipality types. If we look at the spending per student as percentage of GDP per capita, North Macedonia has a high intensity in preprimary and higher education, as a result of the low coverage in these education levels. On the other hand, primary education, even though it accounts for most of the spending, has a low spending intensity per student (amount spent per student enrolled). Compared to regional peers, spending per student in primary education in North Macedonia is the second lowest, indicating that the spending intensity per education level is not well aligned (Figure 13). Moreover, there are vast disparities between municipalities, many of which spend far less than the national per-student average of MKD 53,000 (US\$883). In primary education, per-student spending may range from MKD 32,000 (US\$533) to MKD 182,000 (US\$3,030), a difference of 5.6 times between the lowest and highest spending municipality. This depends in part on the type of municipality (rural versus urban) and the transport needs for schools but also on the current funding formula that seeks to ensure that less-populated municipalities receive more funding to cover all their expenses.

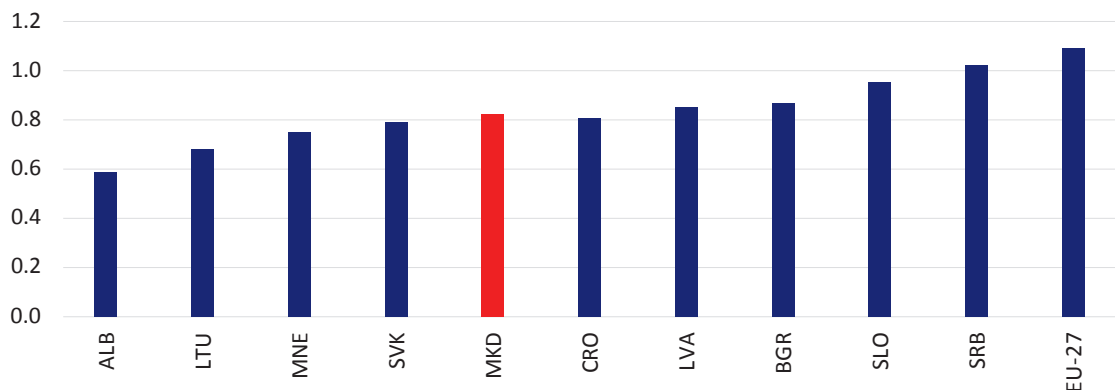
Figure 13. Spending per student and education level 2018, as % of GDP



Source: Eurostat, national authorities, and World Bank staff own calculations.

North Macedonia also spends comparatively less on tertiary education than peer countries but comparatively far more per student. Public spending on tertiary education was 0.8 percent of GDP in 2020 (same as in 2018), far below the EU-27 average of 1.1 percent of GDP. This stands below comparator countries as well, such as Serbia and Croatia, which share a common past and have similar characteristics with the education systems in North Macedonia (Figure 14). As a result, public universities lack the infrastructure and resources they need (buildings, laboratories, and qualified personnel) to improve their quality of teaching and research. On the other hand, North Macedonia has the highest spending per student in tertiary education which, combined with the low enrolment rate and low level of on-time graduation, points to possible inefficiencies in the system.

Figure 14. Spending on tertiary education, as % of GDP, 2018



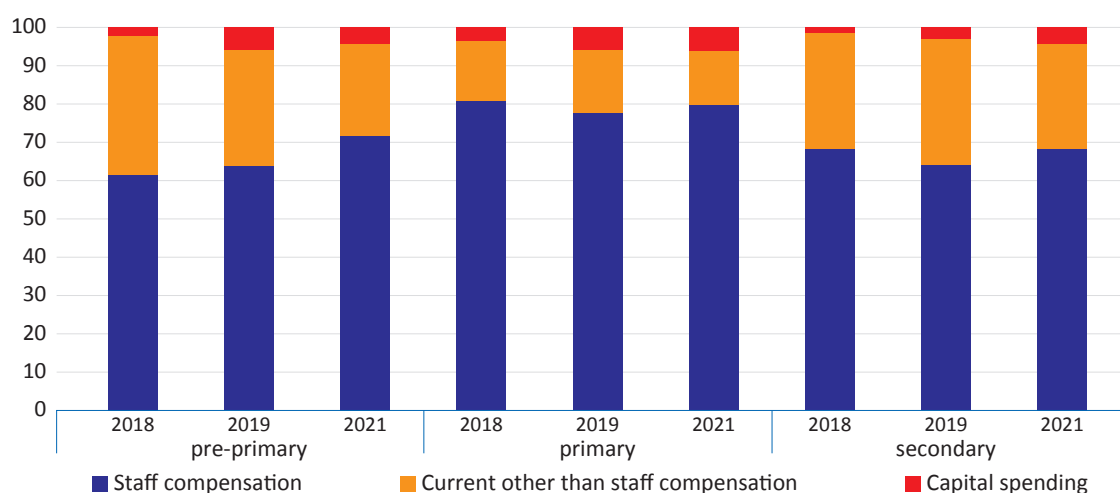
Source: UIS and World Bank staff own calculations.

Most of the spending in preprimary, primary, and secondary education is for covering current expenditure, while little is spent on capital investments and maintenance of buildings. The CG is responsible for capital spending for schools; however, LGs have a significant role to play in the maintenance and repair of buildings as per the division of delegated functions, which they are often hesitant to fund as their financial situation is far from optimal. Thus, both the flow of funding and the investment level as well as the spending for recurrent maintenance are far from optimal. This is evidenced by the fact that over 40 percent of the buildings in primary and secondary networks require repair and reconstruction or are dilapidated (as per data from the State Statistics Office). There are 157 schools (about 15 percent) in the primary and secondary school network whose year of construction or last reconstruction/rehabilitation was in the 1980s or earlier. Despite this dire situation, capital investments accounted for 4.4 percent of overall spending for preprimary, primary, and secondary in 2018–2021. This is less than the average of 7 percent for regional peers that are at a higher level of development and likely have less immediate needs for reconstruction but still invest more. Going forward it will be useful if any plans for investment or network optimization include these schools so that they are either rehabilitated or repurposed under a network optimization plan.

Moreover, the composition of current spending favors salaries rather than non-personnel current expenses. Salaries and other staff compensation account for over 75 percent of total spending on preuniversity education, reaching over 80 percent in primary education. The latest 12 percent increase in teacher salaries from preprimary

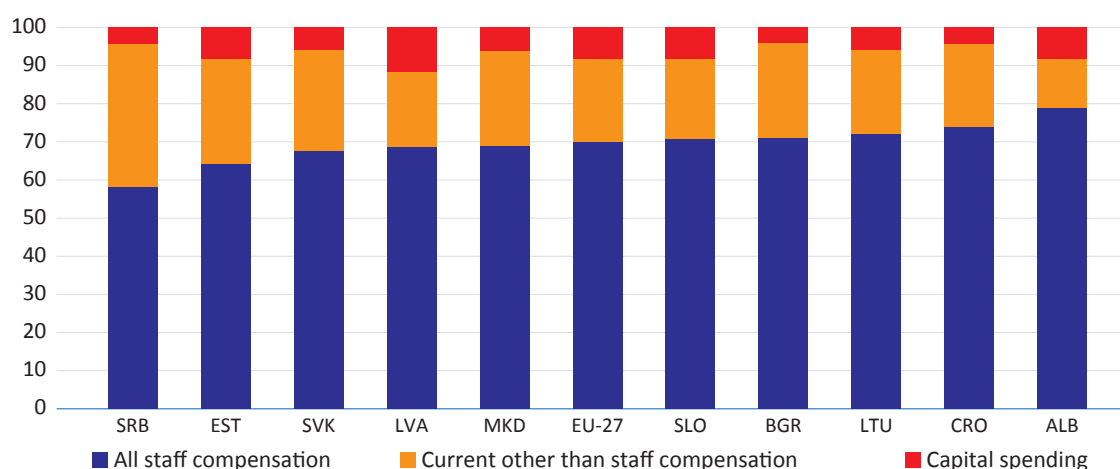
to secondary education agreed between the Government and the Teacher’s Union in March 2022 is likely to further increase the share of salary compensation in the composition of current education spending.³⁵ The share spent on salaries in tertiary education is lower, at 51 percent. Out of the remaining 25 percent in preuniversity spending, the weight depends on the level of education (Figure 15). For example, in preprimary education about 40 percent of recurrent costs other than salaries are for food products; in primary education, most of the remaining non-salary spending is for heating, utilities, and transport, while in secondary education over half goes for transport, which is paid by LGs from 2009 when secondary education became obligatory. This often creates funding problems for LGs, leading to mounting arrears. The ratio of spending between staff and other than staff compensation in North Macedonia is in line with regional and aspirational peers (Figure 16) despite the large variations among schools; however, capital spending is lagging behind most of these countries.

Figure 15. Spending structure per level of education in North Macedonia



Source: MoF and World Bank staff own calculation.

Figure 16. Public spending on education by economic classification, 2018



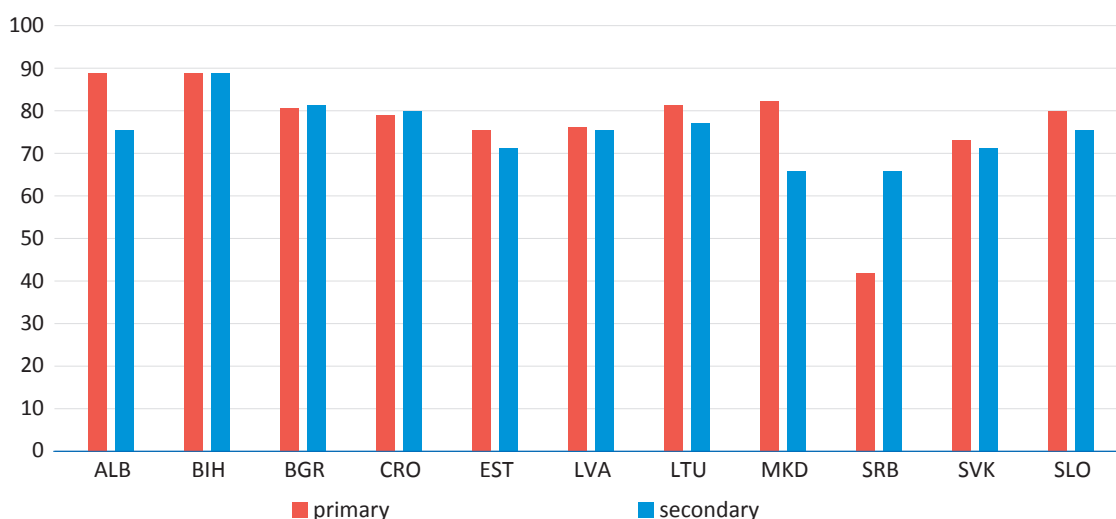
Source: UIS and World Bank staff own calculations.

³⁵ Salary increases were in part a result of public sector-wide salary increases and minimum wage hikes.

C. THE IMPACT OF COVID-19 ON SPENDING IS CONSIDERABLE

The COVID-19 pandemic had clear negative effects on spending on education, even though they are somewhat masked by the fact that education spending as a share of GDP did not decline in 2020, as the fall in the overall GDP was more pronounced than the fall in education spending. Before the COVID-19 pandemic, compared to regional and aspirational peers, North Macedonia had a larger share of salary spending in primary but lower in secondary education (Figure 17). This has changed significantly in 2020 and 2021, driven by the increases in salaries. As a result, the gap in salary spending in primary education widened and salary spending in secondary education had become almost equal with regional peers. Analyzing the education spending within the overall public spending, the negative effect becomes even more obvious.

Figure 17. Salary spending as % of overall spending, by level of education (2019)



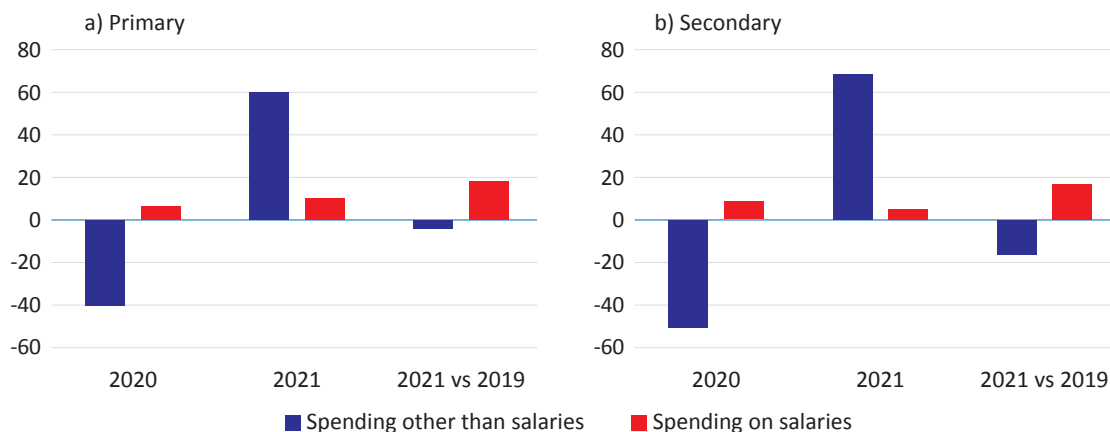
Source: UIS and World Bank staff own calculations.

Education spending, as a percentage of general government spending, has declined as a result of the COVID-19 pandemic. The decline in primary education amounted to 15 pp, while the decline in secondary education was even more pronounced, at 21pp. This dynamic is partly driven by the ramp-up in spending as a result of the various social and business related support programs that the Government implemented to mitigate the COVID-19 impact. Still, this points to the fact that cuts in education spending are pronounced and disproportional compared to other sectors, despite the increasing needs for hygiene measure and support to the students highly affected by COVID-19-related closure of schools and other COVID-19-related expenditures. In addition, the spending cuts came largely from non-salary-related spending.

Spending on non-salary items has declined and has still not returned to pre-COVID levels. Overall spending on non-salary items in primary education declined in nominal terms by 40 percent in 2020 compared to 2019 and has still not recovered to pre-pandemic level, as spending in 2021 was still lower than in 2019 by 5 percent, despite

the fact that in-person teaching was restored and hygiene and other COVID-19-related needs increased (Figure 18a). In secondary education the changes are even more pronounced as the decline of non-salary items in 2020 was 52 percent and spending in 2021 was lower by 18 percent compared to 2019 (Figure 19b).

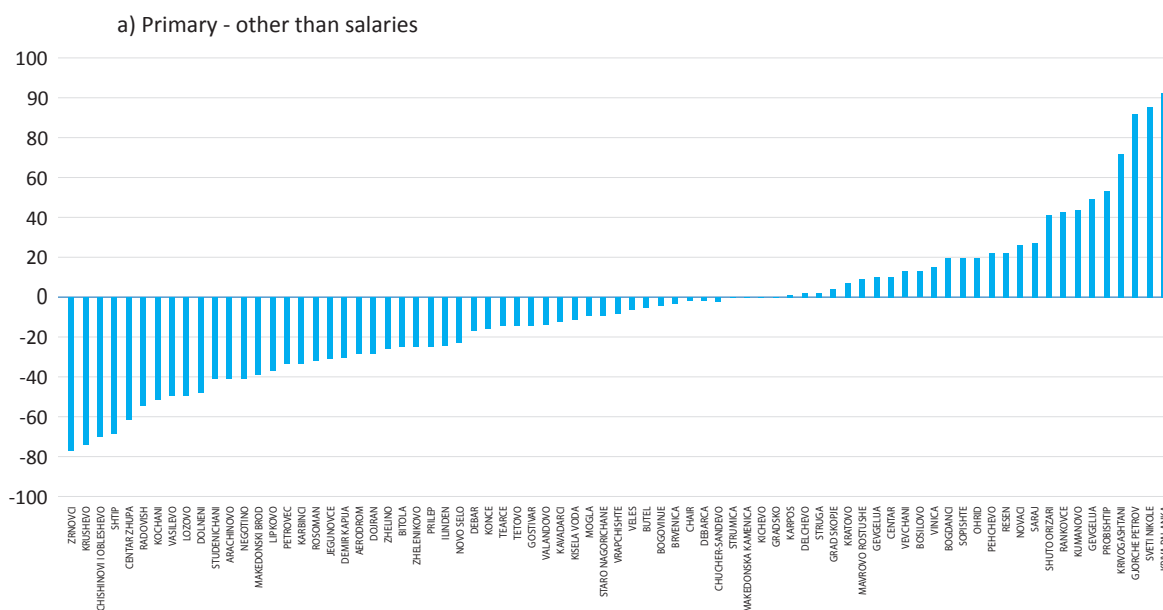
Figure 18. Percentage change in spending by education level

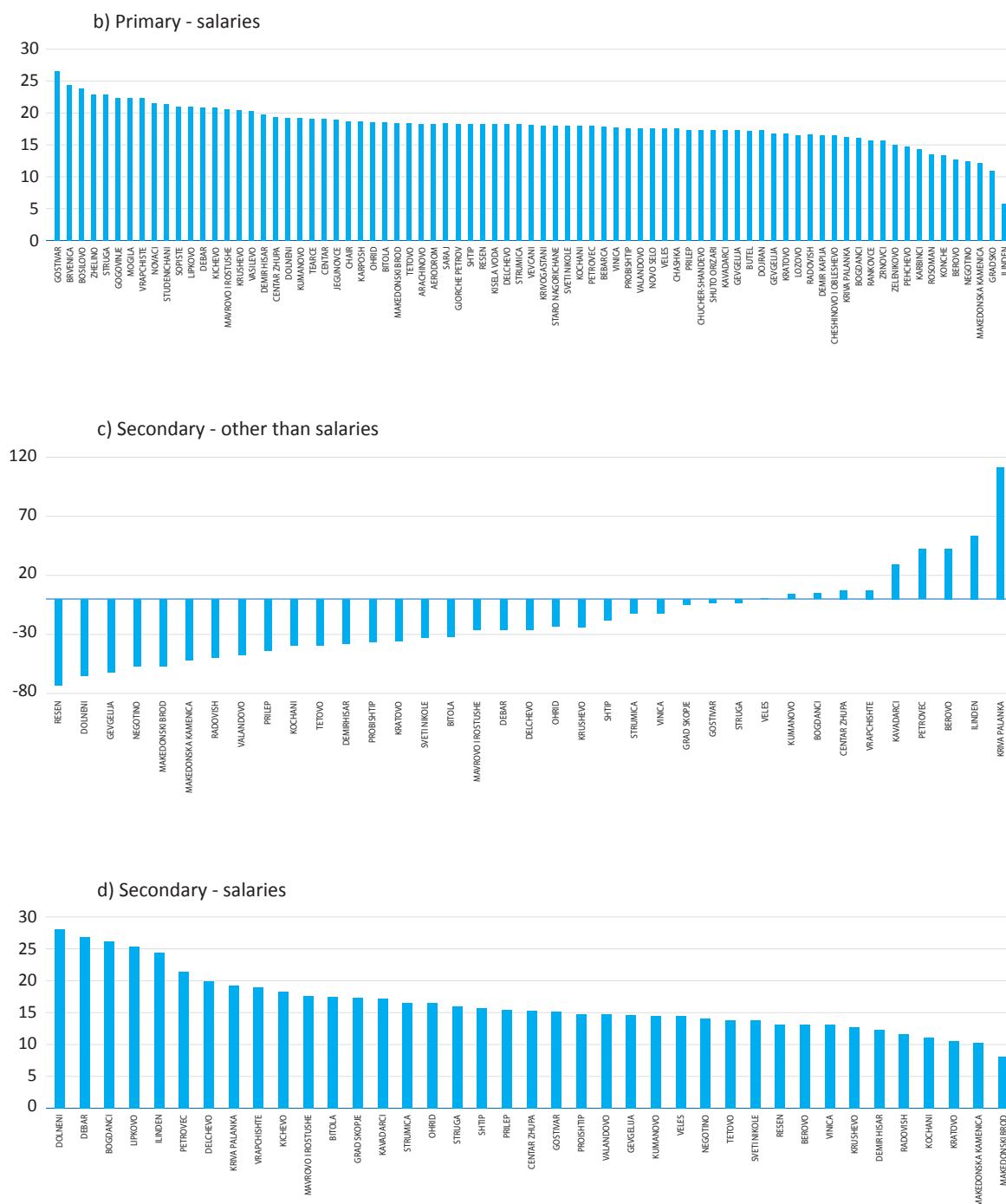


Source: MoF and World Bank staff own calculations.

The decline in non-salary spending, even though present in most municipalities, was uneven across municipalities. In around 60 percent of municipalities, non-salary spending in primary education has still not recovered to the 2019 level, while the remaining have higher spending compared to 2019. The same dynamic is observed in secondary education where in 61 percent of municipalities spending has not recovered to pre-pandemic levels. On the other hand, salary-related spending has increased in all municipalities, largely as a result of across-the-board salary increases in education (covered through block grants) (Figure 19b and 19d).

Figure 19. % Change in expenditure by type and municipality, 2021 versus 2019



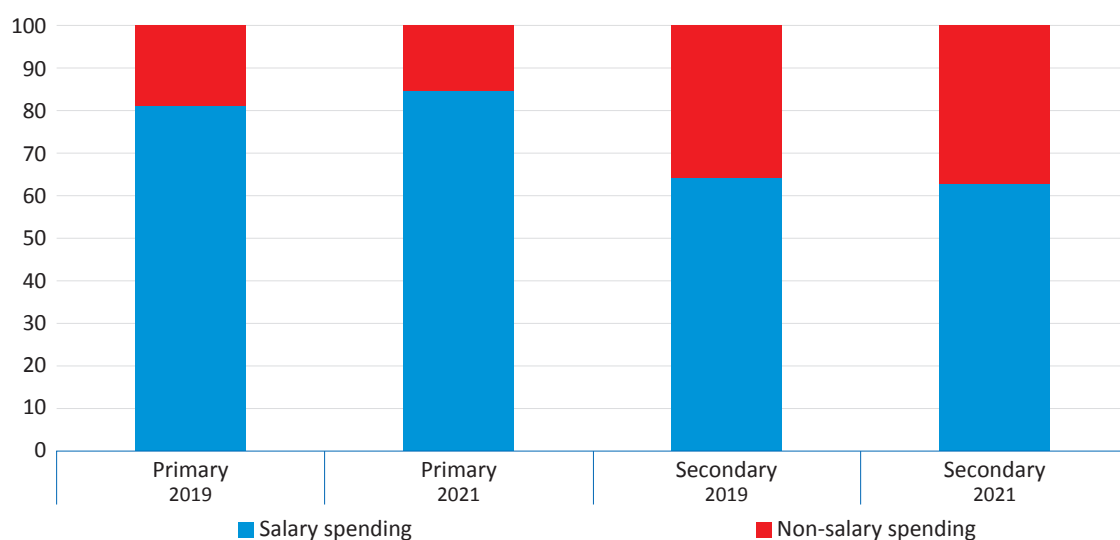


Source: MoF and World Bank staff own calculations.

As a result, salary spending now covers a larger share of overall spending by schools in both primary and secondary education, compared with pre-pandemic spending (Figure 20). If before the pandemic, salaries had been responsible for the lion's share of spending in primary education, this has increased even more with the recent COVID-19-related cuts in non-salary spending and increase in teachers' salaries. Spending on salaries in primary education increased by 18 percent and by 16 percent in secondary education in 2021 compared to 2019. Thus, the share of salary spending as a percentage of overall spending increased from 82 percent to 85 percent between 2019 and 2021. The dynamic is even more pronounced in secondary education where the increase is

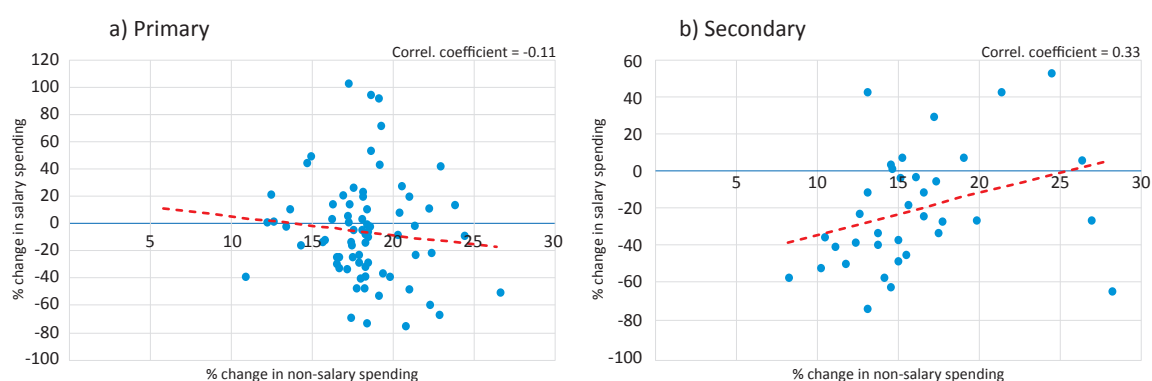
from 66 percent to 74 percent. This points to the need to rebalance spending, to ensure that all non-salary-related spending needs are covered and accounted for in the education budget. Moreover, the relationship of spending on salary and non-salary items in primary education is negative. This indicates that a rising share of the overall financing (including the additional one provided) was dedicated for salary payments, while other needs (such as hygiene, maintenance, and goods and services) had been given less attention (Figure 21).

Figure 20. Spending on salaries and non-salary items by level of education



Source: MoF and World Bank staff own calculations.

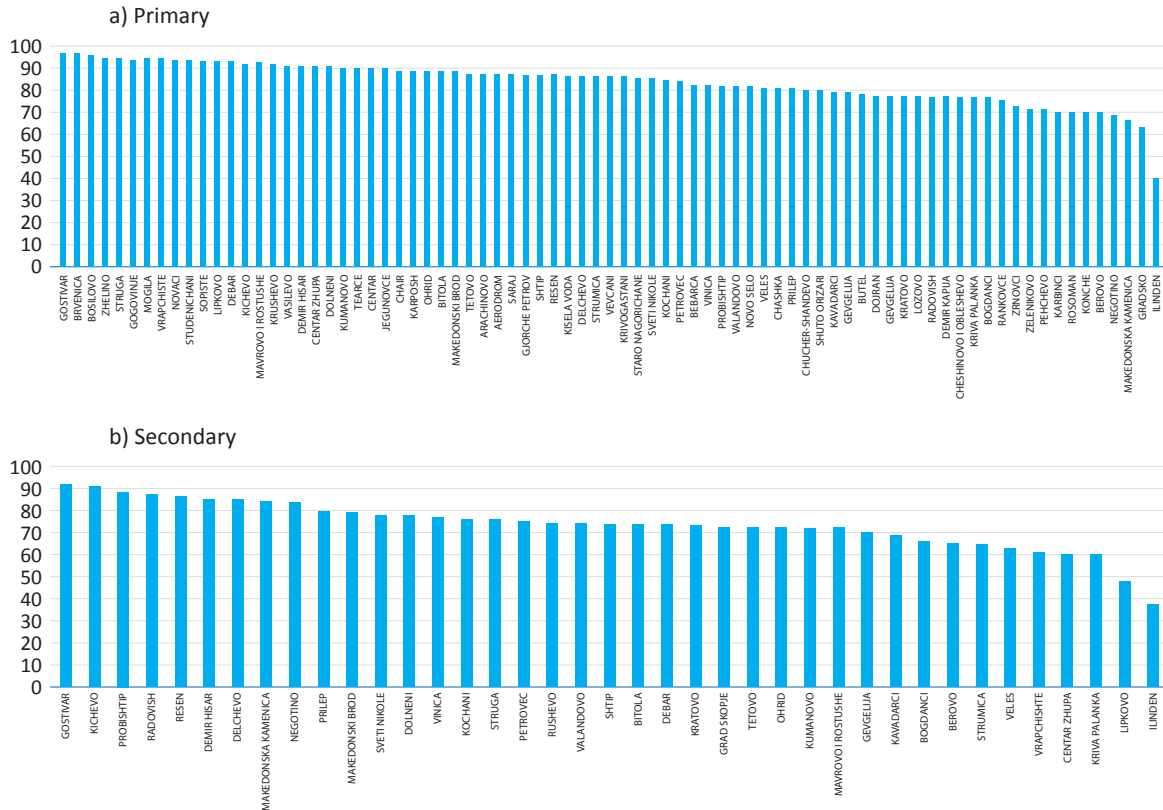
Figure 21. Relationship between salary and non-salary spending



Source: MoF and World Bank staff own calculations.

The disparity of salary spending is wide among municipalities. In primary education, the disparity ranges from a staggering 97 percent of overall spending for salaries in Gostivar, Brvenica, and Bosilevo to 64 percent in Gradsko (Figure 22a). In secondary education, the disparity is also large, ranging from 92 percent of overall spending in Gostivar and Kicevo to 60 percent in Kriva Palanka and Centar Zupa (Figure 22a).

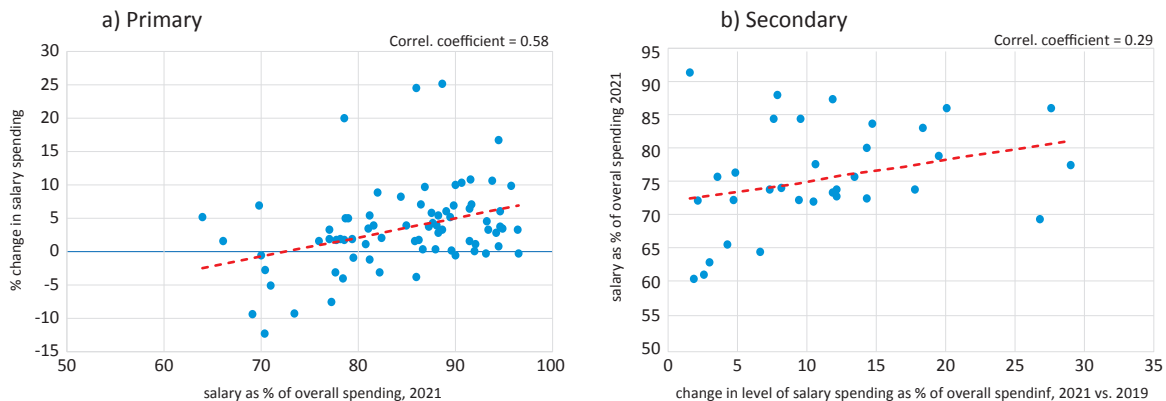
Figure 22. Salaries as % of overall spending by level of education, 2021



Source: MoF and World Bank staff own calculations.

Moreover, the increased spending on salaries between 2019 and 2021 has been deteriorating in terms of the overall spending structure. Municipalities that had a higher share of salaries as a percentage of overall spending increased spending on salaries more than the ones that had a lower share (Figure 23). This is particularly true for primary education and also for secondary education. Specific cases are Bosilevo, Mogila, or Studenicani, which have some of the highest shares of salary spending as percentage of overall spending (above 94 percent). In these, and other similar municipalities, the increase in salary spending was above 10 percent, much higher than in other municipalities with lower shares of salary spending as percentage of overall spending.

Figure 23. Relation between salaries as % of overall spending and salary increases



Source: MoF and World Bank staff own calculations.

CHAPTER 3.

EFFICIENCY AND EFFECTIVENESS OF EDUCATION SPENDING

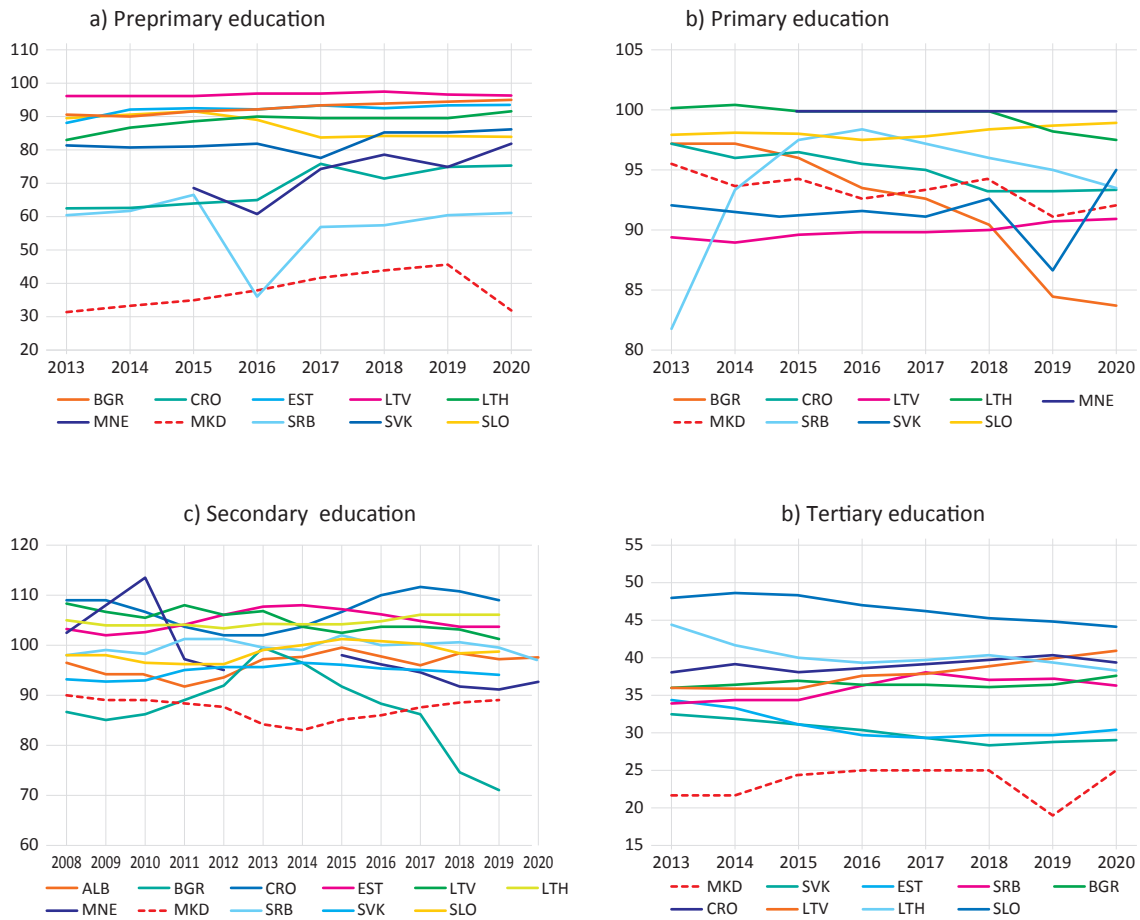
This chapter focuses on the efficiency and effectiveness of education spending in North Macedonia. Section A outlines some of the main challenges that arise from the low enrolment rates at all levels of education. Section B makes evident that current quality outcomes are pointing to ineffective and inefficient use of resources. Section C discusses the optimization of the school network and ways to better use the school infrastructure as a means to bring cost saving. Section D discusses the qualifications, age structure, and compensation of teachers.

A. ENROLMENT RATES ARE LOW AND TRANSLATE INTO A SIGNIFICANT NUMBER OF OUT-OF-SCHOOL CHILDREN

Despite significant strides to improve access to education in the last decade, as explained earlier in Chapter 1, enrolment ratios in North Macedonia are low compared to regional peers, especially at the preprimary and tertiary level (Figure 24). While preprimary enrolment still requires significant improvement, it has shown a moderate upward trend in recent years as the Government has committed to expanding access to preprimary education in the country by taking specific measures to increase resources and expand preschool places.³⁶ Enrolment in primary school is in line with most regional peers; however, it has been on a downward trend, leaving a significant number of children without education, as explained further down in the text. In secondary education, even though enrolment rates have increased, they are still far behind the level of comparator countries. Enrolment ratios in tertiary education, despite some moderate improvements, are the lowest among comparators. These low enrolment rates later on translate into deficiencies in the labor market and reduce the quality of human capital, which in turn dampens possibilities to improve productivity.

³⁶ In 2018, the Government adopted a new comprehensive Education Strategy (2018–2025) which outlines as a core goal to “significantly increase the coverage of children in preschool education”. One of the strategic priorities of the Government is to increase the percentage of children attending preschool children by 50 percent over four years (2017–2021). Furthermore, the strategy makes a commitment to introduce a compulsory year of preprimary education (ages 5–6), which can also be an important step to increase participation. The COVID-19 pandemic had a negative effect on the participation of children in preprimary institutions as it dropped from the historic high of 42 percent in 2019 to 32.5 percent in 2020.

Figure 24. Enrolment ratios in North Macedonia



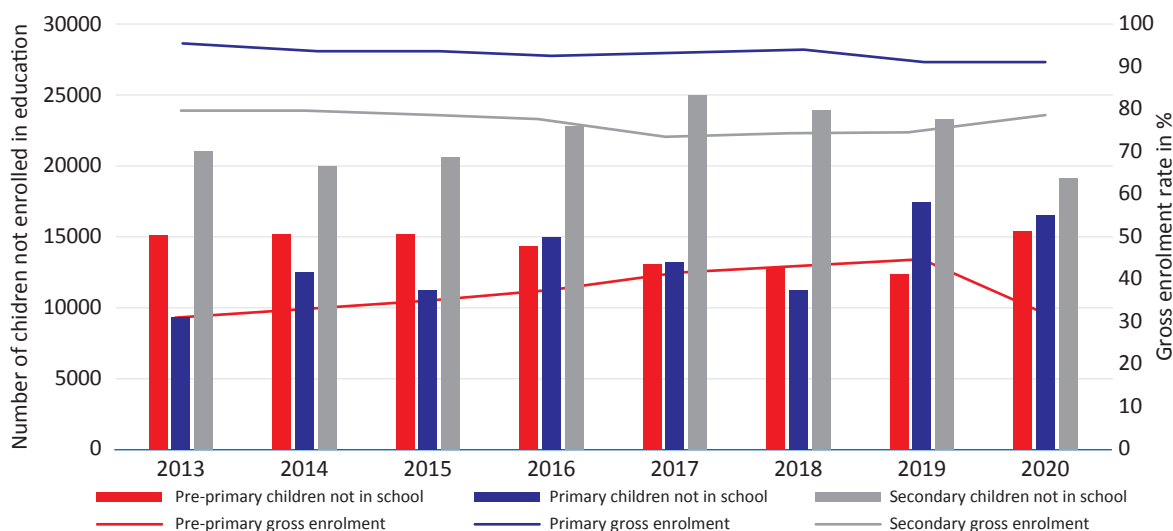
Source: Eurostat and World Bank staff own calculation.

The low enrolment rates translate into a significant number of children not being covered by the education system. A high gross enrolment rate generally indicates a high degree of participation, whether the pupils belong to the official age group or not.³⁷ In North Macedonia, the difference between the actual level of gross enrolment and the full coverage had been on average about 9–10 pp. This figure calculated as a percent of the corresponding age group translates into a significant number of out-of-school children. For example, the average for preprimary age is over 14,000 children. The same number of primary school age children, that is, 14,000, are not participating in primary education, and over 22,000 of secondary school age children are not participating in secondary education (Figure 25).³⁸ For illustration, this would be equal to children enrolled in primary education in all cities in the eastern part of the country being out of school. These figures of out-of-school children are by far the highest among regional comparators. For example, compared to Serbia, the number of out-of-school children in North Macedonia is seven times higher (Figure 26).

³⁷ A gross enrolment ratio value approaching or exceeding 100 percent indicates that a country is, in principle, able to accommodate all of its school age population.

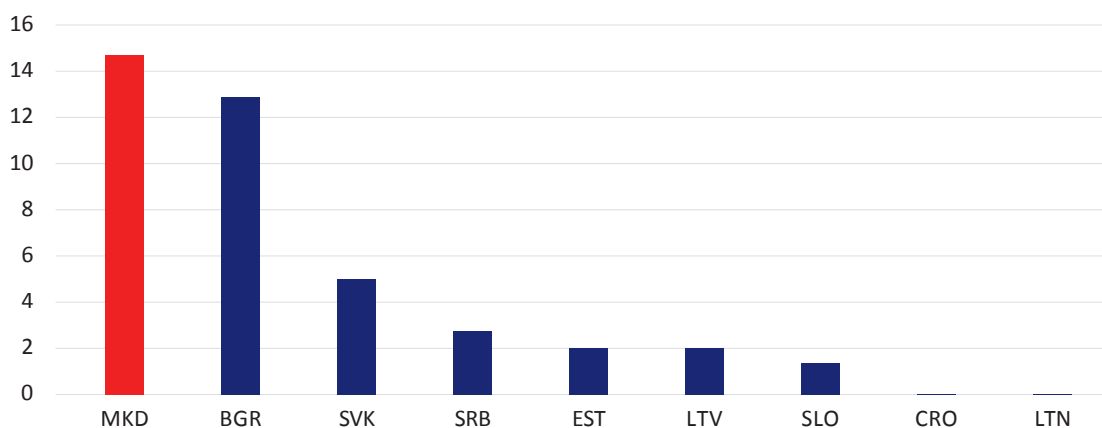
³⁸ If we consider the net enrolment rate that only refers to the actual school participation of official school-age population for the given level of education (that is, it does not include overage/underage or remitting students), the numbers are higher.

Figure 25. Enrolment rates and number of children out-of-school



Source: Eurostat, State Statistics Office and World Bank staff own calculation.

Figure 26. Out-of-school children, by the end of primary education, as % of the population of the corresponding age, 2019



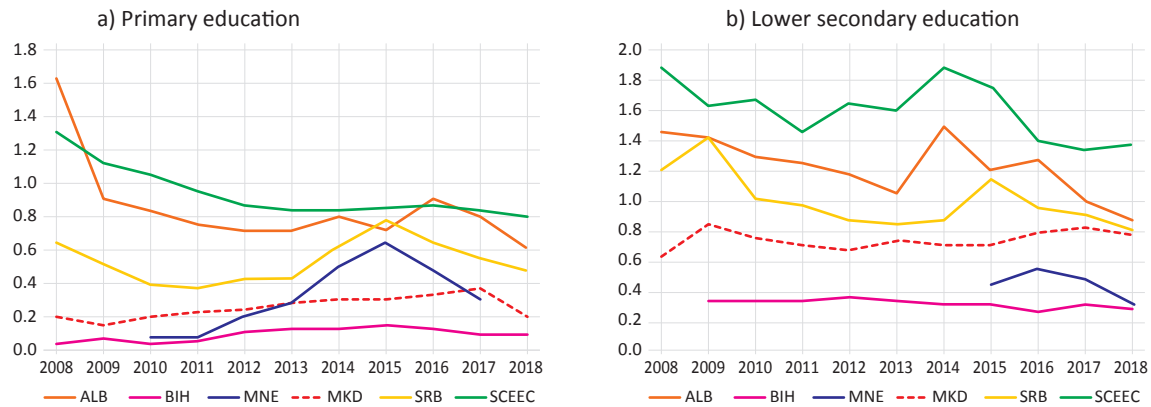
Source: Eurostat and World Bank staff own calculation.

Note: Out-of-school rate is calculated as $100 - (\text{students of a particular age who are enrolled in education at any level} / \text{Total population of that age} \times 100)$.

The internal efficiency of the system can be improved, particularly for the tertiary education. Repetition rates for primary and lower secondary education are low compared to regional peers, indication that the progression flow through the system is uninterrupted (Figure 27). The low repetition rates mainly result from the legal provision that stipulates no repetition of students between the grade 1 and grade 5 in primary education. Dropout rates in primary and secondary education are low, standing below 0.1 percent of the children enrolled in schools (Figure 28). This translates into high completion (retention) rates in primary education of almost 99 percent, which is on par with other regional peers (Figure 29). Nevertheless, these high completion rates are partly driven by a significant number of children who are not enrolled altogether (as mentioned earlier) and in addition the national definition measures the progression from grade 1 to another and not by corresponding age. In higher education, the overall

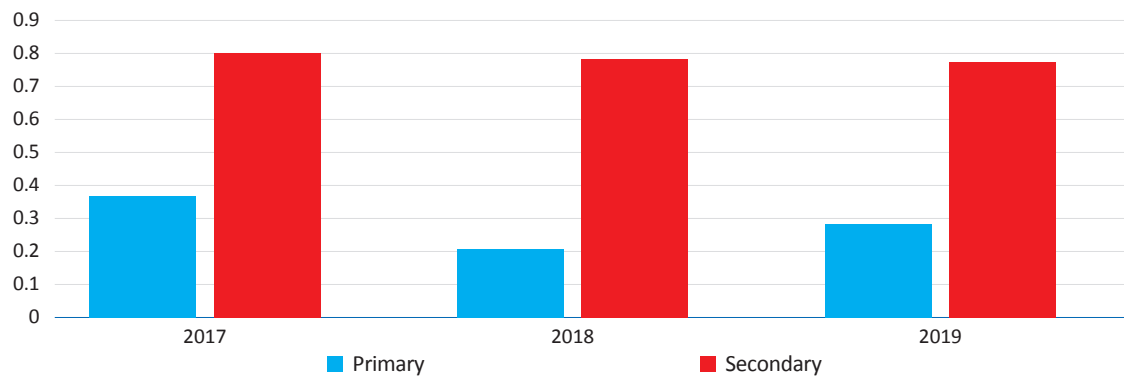
system efficiency remains low, with high dropout rates and long average times to completion: in 2020, according to data from the State Statistical Office, only 37 percent of all university students graduated on time (that is, with no repetition of years), which poses a drain of resources as most of the tertiary education network in North Macedonia is public (more than 85 percent of students are enrolled in public higher education institutions).

Figure 27. Repetition rates



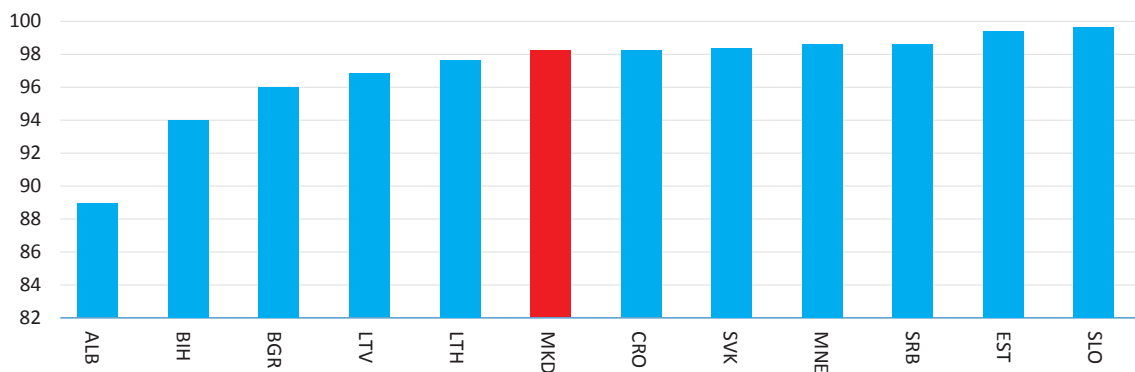
Source: UNESCO and World Bank staff own calculation.

Figure 28. Dropout rates in primary and secondary education



Source: State Statistics Office and World Bank staff own calculation.

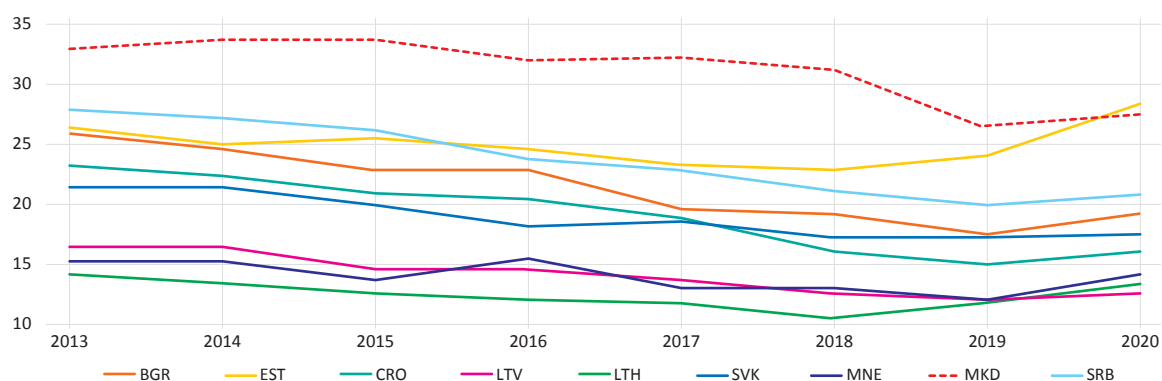
Figure 29. Completion rates, primary



Source: UNESCO and World Bank staff own calculation.

The deficiencies in the education system translate into difficulties in the transition from education to work. The low enrolment rates throughout the education cycle lead to a high number of young people being outside of any education process—nor are they employed and participating in the economy. In fact, North Macedonia has the highest number of youth (26.2 percent) neither in employment nor in education and training, which is considerably higher than regional peers (except Montenegro) (Figure 30). This translates into over 103,000 people in 2020 or about 6.4 percent of the overall population that is not economically active or engaged in education and training.

Figure 30 Young people neither in employment nor in education and training, ages 15–29

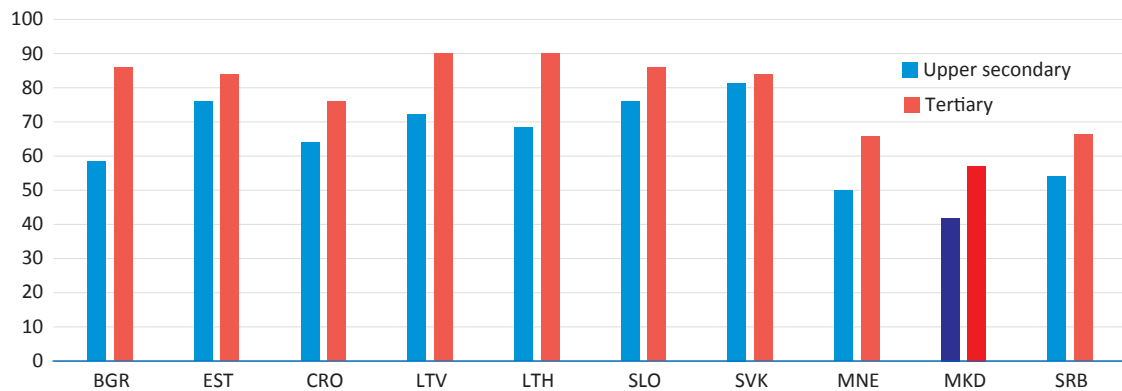


Source: Eurostat and World Bank staff own calculation.

To tackle this issue, North Macedonia has established a Youth Guarantee program, which was introduced in 2018, to help youth transition from the education system to the labor market, but more evidence is needed on its effectiveness. The program aims to provide all youth ages 15–29 with an offer for employment and continued education and training or participation in an active labor market program (ALMP) within four months of registering as a jobseeker. A pilot was conducted in 2018 with 5,266 participants, of which almost 42 percent found employment or took part in an ALMP. These results provided enough evidence for the program to be rolled out on a nationwide basis, with 20,302 young people having been registered in 2019 and 25,502 in 2020. Out of the 2,327 youth who benefited from an ALMP, 28 percent received wage subsidies but most were enrolled in the internship program. As part of the youth guarantee, the Employment Service Agency offers career guidance and supports job matching but only 3,042 youth made use of such services, of which 1,204 individuals were profiled and only 67 individuals received career counselling. While detailed monitoring data are provided on the number of individuals partaking in the youth guarantee and its services, a detailed evaluation report has not been released thus far to explore potential ways of increasing the uptake of such services for youth of all education levels.

Even those who successfully finish education face difficult conditions on the labor market. Even though education returns (in terms of wages) increase when a higher degree of education is obtained, employability in North Macedonia is the lowest compared to regional peers (Figure 31). Around 40 percent of young people with upper secondary education find a job within 1 to 3 years of completing school. This is far below the 70 percent average of the small EU countries and also lower than in Montenegro or Serbia. Having a university diploma also does not guarantee success in the labor market. Only 57 percent of university graduates find a job within 1 to 3 years, far below the 84 percent average of the small EU countries and also lower than Western Balkan peers.

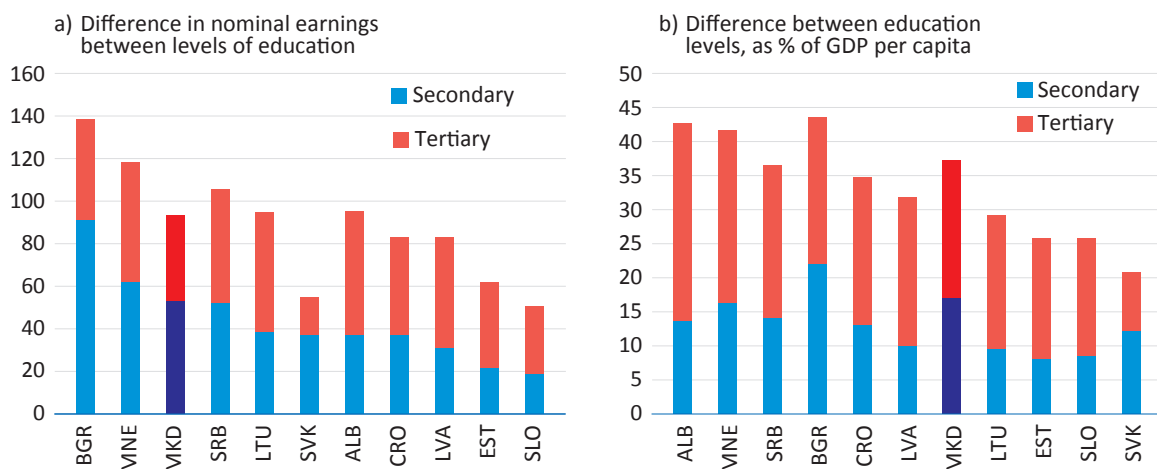
Figure 31. Employment rates by level of education, 1 to 3 years from completing highest education level, ages 18–34, average 2016–2020



Source: Eurostat and World Bank staff own calculation.

Returns to education increase with the level of education. Completion of secondary education in North Macedonia is associated with 53 percent increase in net earnings compared to one with only primary education. This increase is among the highest compared to Western Balkan and EU peers (Figure 32a).³⁹ Holding a university degree adds another 40 percent on top of the earning with secondary education. Additional secondary degree of education in North Macedonia adds 17 percent of GDP per capita to income, while a university degree adds another 20 percent on top of the secondary education degree (Figure 32b). This is lower than the Western Balkan peers but higher than the EU peers. Even though granular data on earnings are not available in terms of the quality of education and returns to education, it is crucial to foster learning across institutions, set the right incentives, and weed out poor performing institutions (particularly in higher education). This is all the more critical because typically the most vulnerable end up in poorer performing institutions and fields of study. In terms of fiscal impact it is also critical for improving the efficiency of the system.

Figure 32. Returns to education with one additional degree of education, as % of GDP per capita



Source: Eurostat and World Bank staff own calculation.

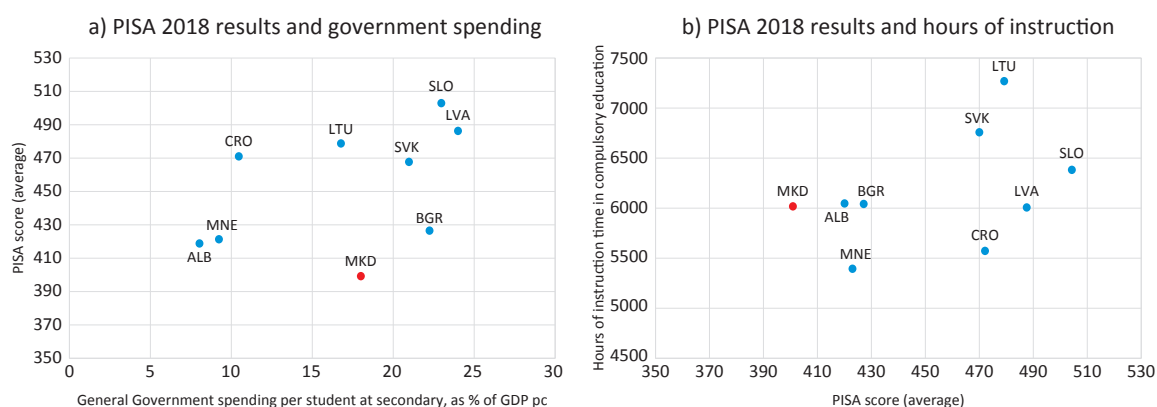
Note: The figure shows annual median equivalized net income per educational attainment level.

³⁹ The calculations are made using Eurostat 'Median income by educational attainment level', which comes from the European Union Statistics on Income and Living Conditions (EU-SILC). As the data come from a unified source, it allows for a proper country comparison, even though limited to the EU and EU candidate countries.

B. QUALITY OUTCOMES POINT TO INEFFECTIVE AND INEFFICIENT USE OF RESOURCES

There is a relationship between the relatively low spending and instruction time and education outcomes in North Macedonia. The country is still well below comparator peers' levels in terms of education outcomes achieved by students in international large-scale assessments such as PISA or TIMSS (as discussed in Chapter 1, Section C). Comparator countries have been able to achieve better learning outcomes with similar or lower levels of expenditure on education (Figure 33).

Figure 33. PISA 2018 results and government spending

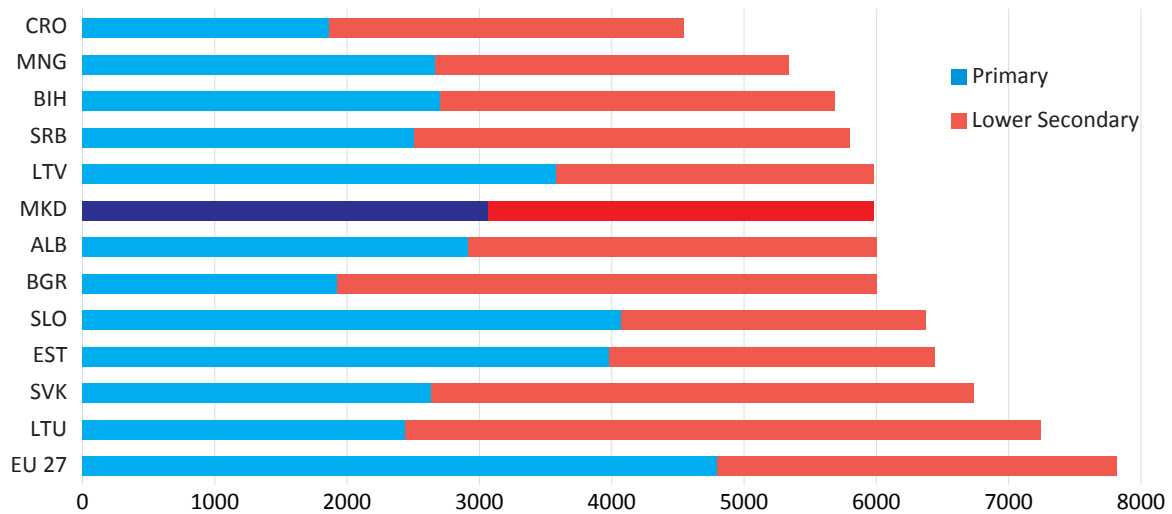


Source: Eurydice, PISA database, MoF, and World Bank staff calculations.

Effectiveness and efficiency of resource allocation in preuniversity education appear to be low compared to regional peers. For example, despite the declining student-teacher ratio (as discussed later in this chapter), instruction hours in North Macedonia are well below the share of instruction time compared to that for EU-27 students. The accumulated instruction time in primary and lower secondary education (9 years) in North Macedonia is about 6,000 hours, on par with most of the regional Western Balkan peers (Figure 34). However, it is 1,800 hours lower than the EU-27 average or between 300 and 700 hours less compared to countries such as Slovakia, Slovenia, and Estonia, which is equivalent to around half a year of schooling.⁴⁰ This means that after completing the years of compulsory education, a student in North Macedonia receives well below the share of instruction time compared to that for EU-27 students.

⁴⁰ Assuming that the time of instruction per day is 6 hours in both North Macedonia and the EU, 1,000 hours is equivalent to 33 weeks of instruction, which is about one year of schooling.

Figure 34. Hours of instruction time in compulsory education, 2019



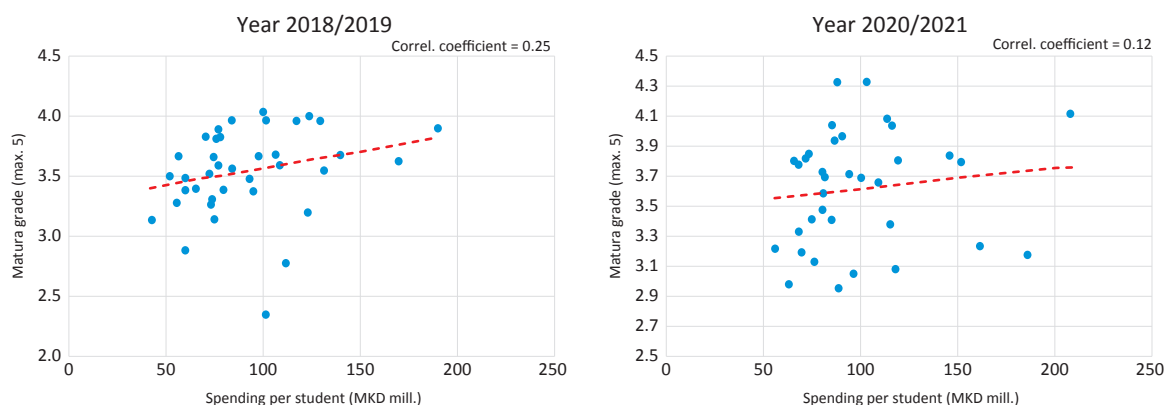
Source: Eurydice and OECD.

A recent analysis of the findings from the TIMSS studies in the Southeastern European region suggests that larger numbers of hours devoted to mathematics or science do not guarantee higher achievements per se.⁴¹ In this respect, extending the time available for learning can have a positive effect only if the quality of instruction increases as well as the time and opportunities available for learning outside school. What the TIMSS analysis further shows is that home support is the most important predictor of science and mathematics achievement of students in all countries of the Southeastern European region, especially in Serbia and North Macedonia. What this finding brings forth is that student's achievement in school is strongly linked with the capital that students bring with them to school. In this context, students who have weak support from home are severely disadvantaged. Therefore, the message to schools and teachers, with the assistance of the Government, is to deploy mechanisms to provide additional opportunities for learning to those students who do not have such support from their parents, especially amidst the COVID-19 pandemic when most of the learning was happening from home.

While there appears to be some relationship between education spending and quality outcomes on the Matura exam, the relationship is weak and irregular. The relationship between spending per student and Matura outcomes in secondary education was positive in 2018/2019 and 2020/2021 (Figure 35). Still, the correlation coefficient was rather weak in both years, 25 percent or less, indicating that there are other factors at play. Moreover, available data per school for 2020/2021 show that there are significant differences in the grades obtained in secondary schools within a given city, which indicates that there are other factors that influence outcome which are distinct from the level of spending (Figure 36). For example, two of the seven high schools in Tetovo have the highest spending but their Matura grades are 2.8 and 3.5, respectively, and two of the three high schools in Kavadarci have similar level of spending, but their Matura grades are 2.2 and 3.9, respectively. Thus, one can conclude that the level of spending is a weak indicator of the Matura outcomes.

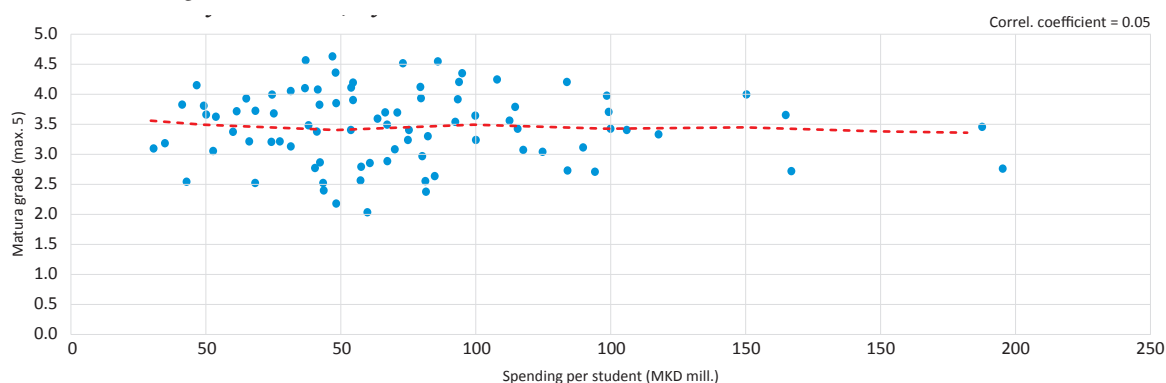
⁴¹ Alia, A., J. B. Pavesic, and M. Rozmna. 2022. "Opportunity to Learn Mathematics and Science." In *Dinaric Perspectives on TIMSS 2019*, edited by Japelj Pavešić et al. Springer: IEA Research for Education.

Figure 35. Relationship between Matura outcomes and spending per student in secondary education, by municipality



Source: MoF, State Statistics Office, and World Bank staff own elaboration.

Figure 36. Relationship between Matura outcomes and spending per student in secondary education, by school



Source: MoF, State Statistics Office, and World Bank staff own elaboration.

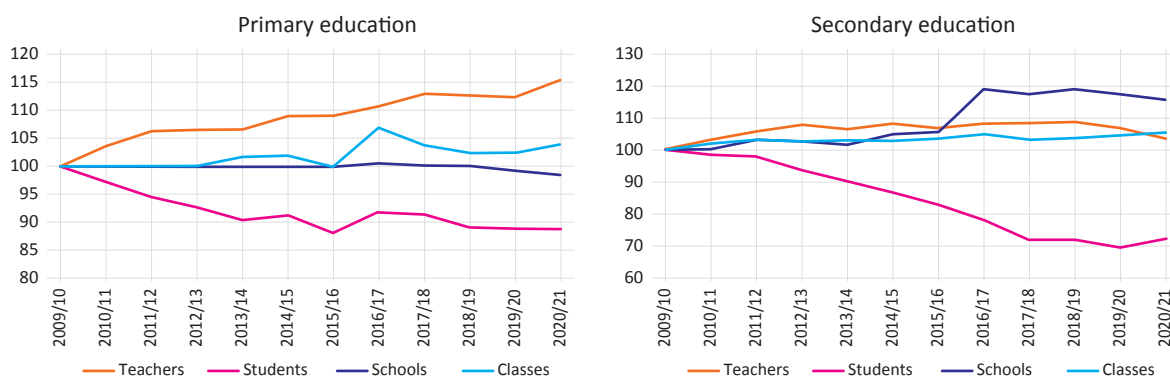
C. OPTIMIZATION AND BETTER UTILIZATION OF SCHOOL INFRASTRUCTURE CAN BRING COST SAVING

North Macedonia's population is ageing, with implications for the demand for education services. The country's total fertility rate is currently below replacement level, which means the population will both age and decline in the coming years. Thus, the country needs to optimize the use of resources within the education system and make it more efficient. The steps that can be taken to improve efficiency of spending include optimizing the school network, reassessing the student-teacher ratio, and improving the public financial management (PFM) within the sector, aimed at streamlining the division of functions between local and central levels.

The current school network is not following demographic and enrolment trends as the significant drop in students is accompanied by a rise in the number of teachers and classes. Over the past two decades, the average decline of the population ages 3–18 is 1.6 percent per year, a cumulative drop of 27 percent, which significantly reduces

the number of enrolled children. For instance, in 2017, more than 85 percent of primary schools noticed a decrease in the number of enrolled students. Despite this, there has been a phenomenon of proliferation of teachers and classes in the primary and secondary school networks. Since 2009, the number of students in primary education has decreased by 11 percent, but the number of teachers has increased by 16 percent. Similar trends are observed in secondary education (Figure 37).

Figure 37. School network indicators, primary and secondary education (index, 2009 = 100)



Source: State Statistics Office and World Bank staff own calculations.

The student-teacher ratio in North Macedonia has drastically gone down, to the extent that it is now far below the OECD average. In the 2000/2001 school year, the number of students per teacher in primary school was over 18, while this number dropped to slightly over 10 in 2019/2020 –far less than the OECD average of 15 students per teacher. Moreover, over half of the municipalities have an average of 5–10 students per teacher.

In addition, there is a wide student-teacher ratio disparity among municipalities. For example, the student-teacher ratio in the municipality of Debarca is only 2 students per teacher, while in Shuto Orizari it is 18. Part of the disparities observed in the ratios can be attributed to the fact that some schools have a higher number of teachers because of different languages of instruction (as there are five languages of instruction in primary education) especially in schools that have satellite schools under their jurisdiction. However, this wide diversity is mostly due to the current funding formulas for primary and secondary education that are input based and incorporate no motivation for municipalities to optimize the delivery of education services.⁴² This is the most obvious shortcoming that should be addressed, both from the perspective of network optimization and of revisiting the financing formulas for schools—an area on which North Macedonia has already started working.

Decisions on hiring teachers have not followed a consistent economic rationale and have often been politically motivated. The continuous increase in number of teachers despite declining student numbers is not due to changes in curriculum, but the causes appear to be structural (that is, overhiring of teachers). Between 2006 and

⁴² Despite the detailed elaboration of the per capita formulas, the amounts of block grants transferred to municipalities are affected by additional factors, so-called 'temporary buffers' that were introduced in 2006 when the formulas came into force. They specify that the amounts to be transferred in the first years of implementation were to be based on the amount the CG was spending on education in each municipality in the year before the decentralization of the function, that is, if applying the formula for a given municipality results in a lower or higher amount to be transferred, as a result of changes in enrolment or other factors captured in the formula, this will be equalized by the buffers (upper or lower), setting the maximum amount of change permitted and multiplied by the municipality's allocation in the previous year. This turned out to be an 'original sin' in terms of primary education financing, cutting into its efficiency.

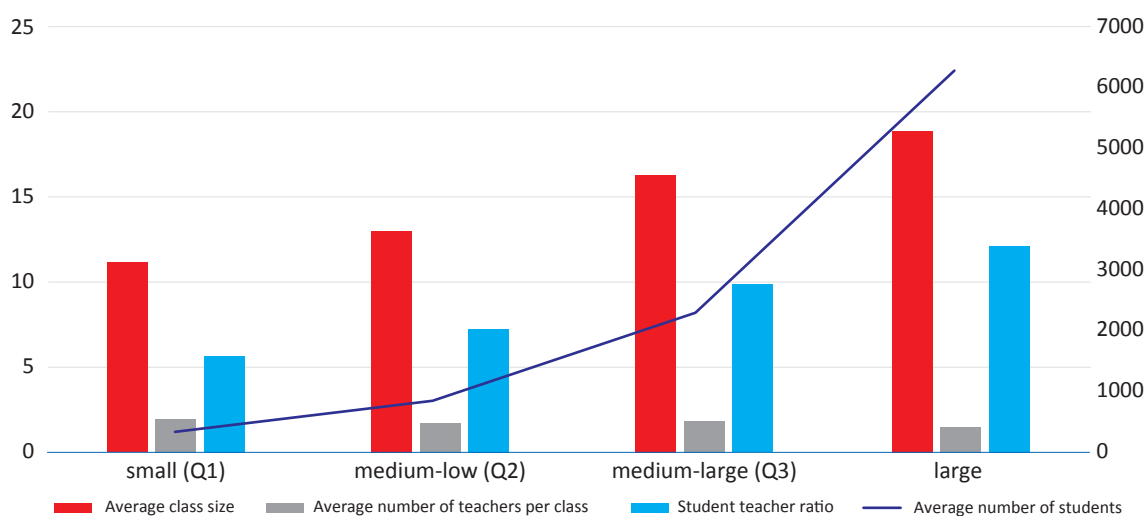
2019, only 8 municipalities (out of 84) saw an increase in students (out of which in 2 the increase was only by two or three students). On the other hand, all municipalities increased teacher staff in the absence of rigorous control mechanisms of hiring teachers at the national level. Kicevo and Caska are two particular cases: in the former, the number of students increased by 354 while the teacher staff increased by 275, and in the latter, the number of students increased by 29 while 25 teachers were hired (that is, almost one new teacher for every new student in both cases). Overall, on average for every 14 students lost, there was one teacher hired. Hence, going forward it will be beneficial to tighten the teacher hiring process and avoid overhiring, thus preventing further eroding of the already low efficiency of the system.

Box 4. Reductions in student-teacher ratios and average class sizes are not likely to improve the quality of education

Evidence from the OECD suggests that, on average, class size and student-teacher ratio matter little for what students ultimately learn. At the most general level, this is easily visible when analyzing countries' performance on international tests such as PISA where better-performing countries do not have smaller classes on average or better student-teacher ratio. Previous PISA reports have pointed out that some top-performing education systems have large classes and suggest that investments in teacher quality are more effective than investing in smaller classes.⁴³

Similar trends of inefficiency are observed when it comes to class sizes. At primary schools, the average class size in urban areas is 20.5 and in rural areas is 12.9—both of which are lower than the OECD average of 21 pupils. There is a correlation between the size of the municipality and the average class size, that is, also correlated with the fact that the number of teachers per class in smaller municipalities is higher by some 20 percent. Considering that the teaching curriculum is the same across the country, this is an indication that the teaching staff is not used efficiently and uniformly.

Figure 38. Primary school networks in 2019, by quartiles of student number and municipality size

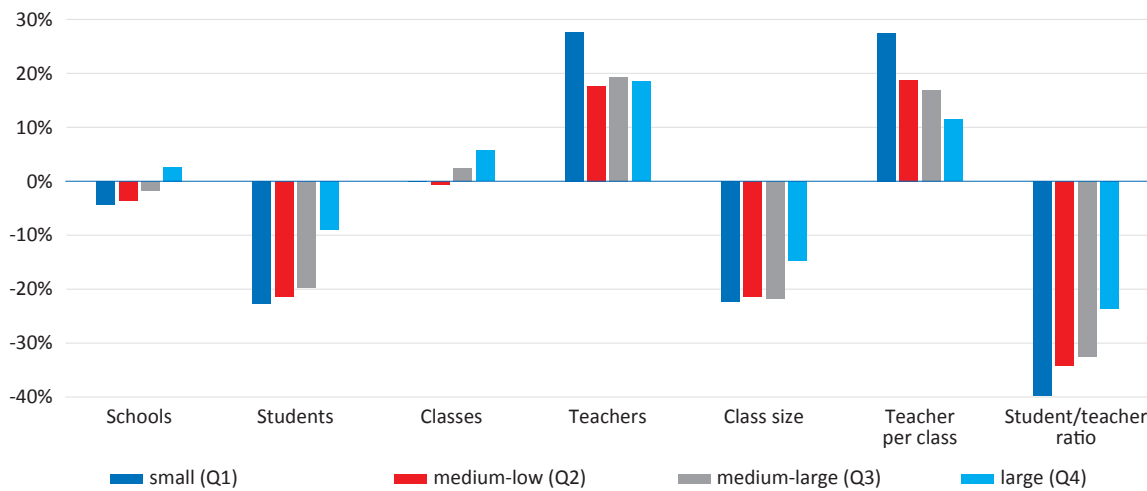


Source: State Statistics Office and World Bank staff own calculations.

⁴³ OECD. 2014. PISA 2012 Results: Students and Money—Financial Literacy Skills for the 21st Century. Volume VI. Paris: OECD Publishing

Analyzing changes over time, it is obvious that the number of students declines in all quartiles, with particular emphasis on smaller municipalities (Figure 39). However, the number of classes (as one of the main policy variables for controlling efficiency) did not change in small and medium municipalities despite their loss of over 20 percent of students. Thus, the average class size shrunk approximately for the same amount as a result of student loss and on top of this, there was significant hiring of teachers. For large municipalities, there is an opposite phenomenon but again leading to a loss in efficiency, that is, these municipalities opened new classes despite having lost part of the students, which led to the hiring of teachers.

Figure 39. Changes of networks 2007–2019, by quartiles of student number



Source: State Statistics Office and World Bank staff own calculations.

From the perspective of rural and urban municipalities (Figures 40 and 41) the picture is the same, as the large and medium-large municipalities are represented by Skopje and the major towns in the country. Thus, we can observe larger classes and a much higher student-teacher ratio as well as the same phenomenon in rural areas of losing a significant number of students while hiring an equally high number of teachers (for Skopje, the teacher increase is due to the higher number of classes but with declining class size).

Figure 40. Primary school networks in 2019, by municipality type

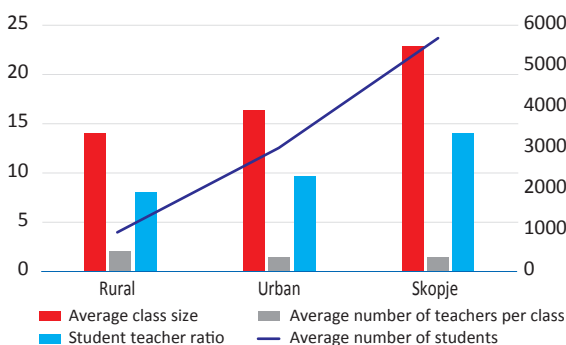
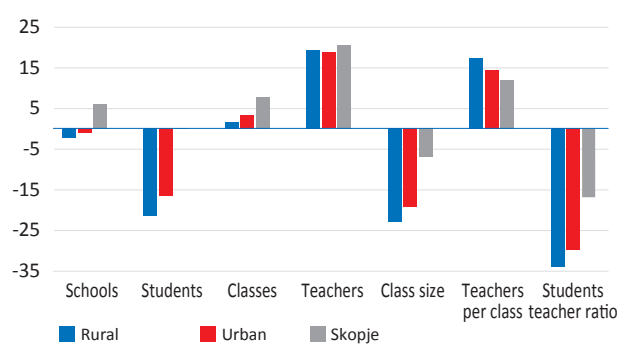


Figure 41. Changes of networks 2007–2019, by municipality type



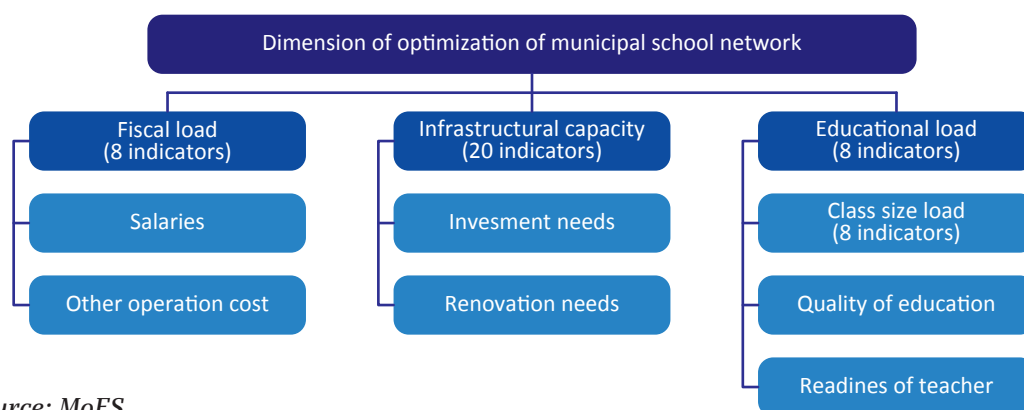
Source: State Statistics Office and World Bank staff own calculations

To address these shortcomings, the Government has begun working on the process of optimization of the school network in primary education. The stated objective of the

optimization is to harmonize the necessary learning conditions and standards for all children in the country while making efficient use of the financial resources for an educational process of sufficient quality. With support from the United Nations Children's Fund (UNICEF) and the World Bank, MoES has prepared a network optimization plan and a methodology according to which the optimization would take place. The proposed methodology consists of three dimensions that create the calculation index (Figure 42):⁴⁴

- Fiscal burden measures the schools' burden in terms of their annual operating costs and has a share of 20 percent in the overall index. These include salaries, utilities, and heating. This dimension covers eight indicators that are measured at the school level (including central and satellite schools) and then aggregated at the municipal level using the weight factor proportional to the number of students in the school.
- Infrastructure capacity quantifies the ability of school buildings to adapt their capacities for realization of the teaching process in a single shift for all classes and to meet the national standards and norms as well as the principles of the new 'Concept of Primary Education'. It has a share of 30 percent in the overall index. This dimension contains 68 indicators calculated at a school building level and then aggregated at the municipal level using the weight factor proportional to the number of students in the school.
- Education capacity quantifies the educational characteristics of a school network through 21 indicators and has a share of 45 percent in the overall index. These indicators measure the level of optimization of teaching staff in the educational process, the compliance of the size of the classes with the legal criteria, and the quality of education. The indicators are primarily measured at the school level (including central and satellite schools), and then they are aggregated at the municipal level using the weight factor proportional to the number of students in the school

Figure 42. Draft dimensions of the optimization calculation index



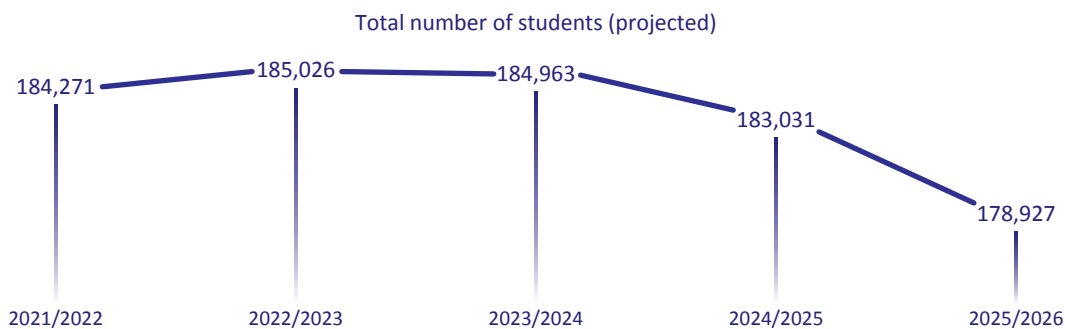
Source: MoES.

The implementation of the optimization plan is expected to start with a pilot in several municipalities before its national rollout. The projected decrease in enrolment rates in primary education for the next few years suggests that there may

⁴⁴ The fiscal dimension has a share of 20 percent in the total index, the infrastructure capacity 35 percent and the education capacity 45 percent.

be a cost-saving potential for the public purse in the future (Figure 43) and an opportunity for more effective use of the existing infrastructure.⁴⁵ In addition, the newly proposed per-student funding formula⁴⁶ for primary education is estimated to increase education spending in North Macedonia to the average of the EU by the end of 2026, with the effective share of salaries in the total transfers expected to decline in favor of other expenditures (that is, capital investments). Both the optimization plan and the introduction of a new funding formula are big steps for the system in a short time and are anticipated to correct some of the inefficiencies that exist in the system of education financing in North Macedonia.

Figure 43. Projected number of primary school students until 2025/2026



Source: MoES.

In parallel with the optimization plan, the Government needs to work on streamlining the PFM process in the education sector, as part of the overall PFM reform agenda that is being implemented since 2018/2019. Given the fiscal constraints the Government faces, it is critical that the PFM system is responsive to clearly defined human capital outcomes. This is particularly true in the case of connecting the different functions of the central and local governments in education, their adequate definition, implementation, and financing. The lack of clarity in defining expenditure assignments in North Macedonia affects the behavior of LGs and central ministries and the efficient operation of the intergovernmental finance system in the education sector (for more details see Box 5).

Box 5. The challenging PFM process of education

Intergovernmental fiscal frameworks need to work both ways and provide a mutually reinforcing cycle of funding, responsibilities, and checks and balances. On the one hand, the CG needs to work closely and cooperatively with LGs, where both will ensure adequate resources are available for the achievement of national education objectives. On the other hand, the CG needs to have a mechanism for ensuring that services are delivered with quality and in an efficient way. Clarity of the roles and functions of different levels of government in the achievement of objectives and

⁴⁵ Currently there are 15,250 primary education teachers: 6,100 are grade teachers and 9,150 are subject teachers. According to the optimization plan, the optimal number of teachers is 13,600. However, in the next five years 1,950 teachers will retire and under assumption that after their retirement new teachers would not be hired, the school network will lack 300 teachers. When optimizing based on their profile, in five years there will be a shortage of grade teachers. Approximately 1,400 subject teachers will be laid off—3,000 subject teachers are currently employed under temporary contracts; thus, the issue of overemployment of subject teachers could be rationally solved.

⁴⁶ The newly proposed funding formula consists of four components: (1) basic component (applies to all students without exception); (2) variable component (applies only to certain students and covers the costs for vulnerable categories); (3) adjusting component (provides a smoothing effect on the results obtained from the previous two components); and (4) development component (provides performance-based incentives to schools).

how services are to be financed is important. Predictable flow of intergovernmental transfers is critical, since the LGs depend on these for service delivery as is the case in North Macedonia.

The fragmentation and lack of modernization of the LG budgeting process is a serious impediment to more efficient spending and higher quality of public services, including education as a crucial sector. LGs in North Macedonia still operate through a series of separate budgetary accounts: (a) the principal budget, (b) the donations budget, (c) the block grants budget, (d) the budget for self-financing activities, and (e) the borrowed funds budget since 2008. The result is fragmented decision-making and difficulties in setting clear priorities. For example, because the block grants are predominantly used to fund education, LGs resist spending money on education from the principal budget (their own general funds). The funds transferred as part of the block grants are sometimes insufficient, so the LG has an option to either top up the transfers with its own resources or let unpaid bills accumulate as arrears and lead to blocked accounts of schools or whole municipalities. In addition, the capital budget is highly fragmented and is generally deemed to be an inefficient system for financing of capital projects. Even though capital investment in preuniversity education is done by the CG, the fact that LGs struggle with most basic capital investment also impedes any possible co-funding by LGs for capital investments in education. Additionally, as LGs are in charge of maintaining local roads, the lack of funding leads to poor maintenance and road quality, so the bus transportation of students on these roads is difficult. Finally, local expenditure efficiency is affected by the suboptimal size of some municipalities. Some LGs are too small to be able to use economies of scale and provide decent quality services, including education as a basic service.

There is a need to reexamine the logic and practice of delegated functions in North Macedonia. As in other countries, the line between delegated and devolved public services is blurred. The rationale for having delegated rather than devolved functions is that on one side the CG still has a strong interest in ensuring service delivery, but on the other hand this obligates the CG to, among other things, provide a minimum level of financing. North Macedonia does this through block grants, which is most evident in education as it accounts for the lion's share of all grants. Other than monitoring that the funds are spent on the specified sector, there is no follow-up by any CG unit on how efficiently these funds are spent and on differences in how the LGs perform. For example, MoES only limits its role on transferring the block grants to LGs, but as LGs have their own formulas for distributing the funds to each school, MoES has no way of knowing or monitoring if the funds were distributed correctly and efficiently. This leads to oversight deficiencies by MoES. Thus, in the current situation there is no single institution that monitors the whole education process (at least on the spending part) and conducts a proper ex post analysis of efficiency and outcomes.

The categorization as delegated services in practice also meant—at least as interpreted by the LGs themselves—that all spending in those sectors should be financed by CG funds. Yet there is no real reason why that should be the case. The rationale of delegated functions is that the CG provides financing for some minimum level of services, while LGs can and should contribute funds to increase the scope of the services. However, the lack of coordination and trust between the two levels of

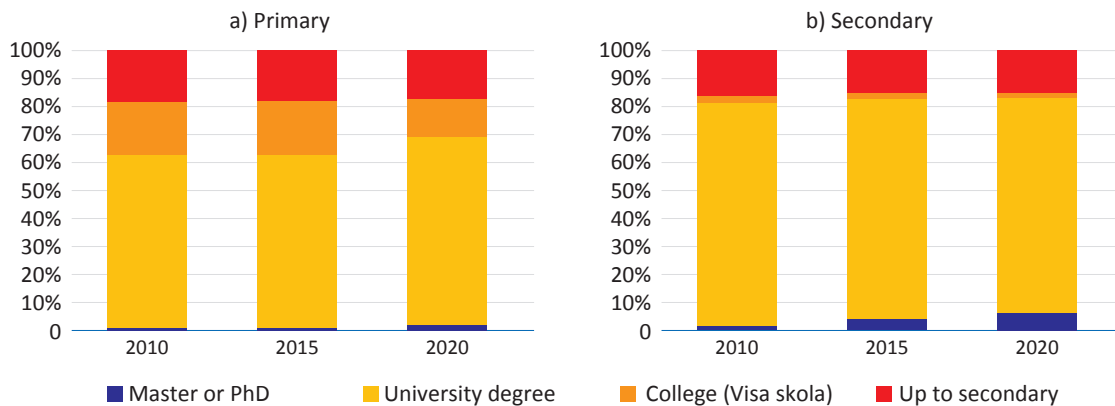
government is impeding improvement in the system and leading to inefficiencies.

The conclusion is that the lack of clarity in defining expenditure assignments in North Macedonia affects the behavior of LGs and central ministries as well as the efficient operation of the intergovernmental finance system in the education sector (an issue evident in many other sectors). Going forward it is advisable to (a) review the overall PFM functioning of LGs, including a clear definition of intergovernmental rules and responsibilities in education; (b) clarify that block grants for delegated responsibilities are only supposed to finance minimum required expenditures in that sector and that they need to be complemented by the municipalities themselves; (c) initiate an annual dialogue aimed at coordinating activities between MoF, MoES, Association of the units of local self-government of the Republic of North Macedonia - ZELS, and MLSP to consider budget proposals for the financing of education that is decentralized; and (d) strengthen the oversight function of MoES in terms of ensuring adequate and efficient funds distributions coupled with funding for monitoring of education outcome parameters.

D. THE QUALIFICATIONS, AGE STRUCTURE, AND COMPENSATION OF TEACHERS

Teacher's qualification level has increased over the past decade. Most of the teachers in primary and secondary education hold a university degree. In primary education, the share has increased from 61 percent to 72 percent of all teaching staff (Figure 44). In addition, the share of teachers holding a masters or a PhD diploma has also increased from 1 percent to 3 percent of all teaching staff, while the share of teachers with a college ('Visa skola') or lower-level degree has declined from 38 percent to 26 percent.⁴⁷ In secondary education, the share of teachers holding a university diploma has declined somewhat from 80 percent to 77 percent of all teaching staff, but the share of teachers with a masters or PhD diploma increased from 2 percent to 6 percent. As in primary education, the share of teachers with a college ('Visa skola') or lower-level degree has declined.

Figure 44. Teacher's qualification level by degree obtained



Source: MoES and World Bank staff own calculations.

⁴⁷ The decline is due to the discontinuation of the college pre-service teacher training programs; thus, there are new teachers with this level of education.

The age structure of the teaching staff is on par with regional peers. Around half of teachers in all preuniversity levels of education in North Macedonia are between 35 and 49 years of age (Figure 45). Relatively older teachers (aged 50 or over) account for 30 percent to 37 percent of all teacher staff, depending on the level of education. Young teachers (ages 25 to 34) account for the smallest portion of teaching staff.

Nevertheless, ageing is a significant characteristic in the distribution of teacher staff in North Macedonia. The share of young teachers (ages 25–34) in primary education had declined by 7 pp in 2013–2020 (Figure 46b). This is the highest decline among regional peers, with the exception of Croatia, and it is contrary to the developments in these countries, where the share of young teachers has either been maintained or has grown slightly. The same dynamic is observed in lower secondary education where the decline in the share of young teachers is 7 pp in the same period.

Figure 45. Distribution of teachers by age group, 2020

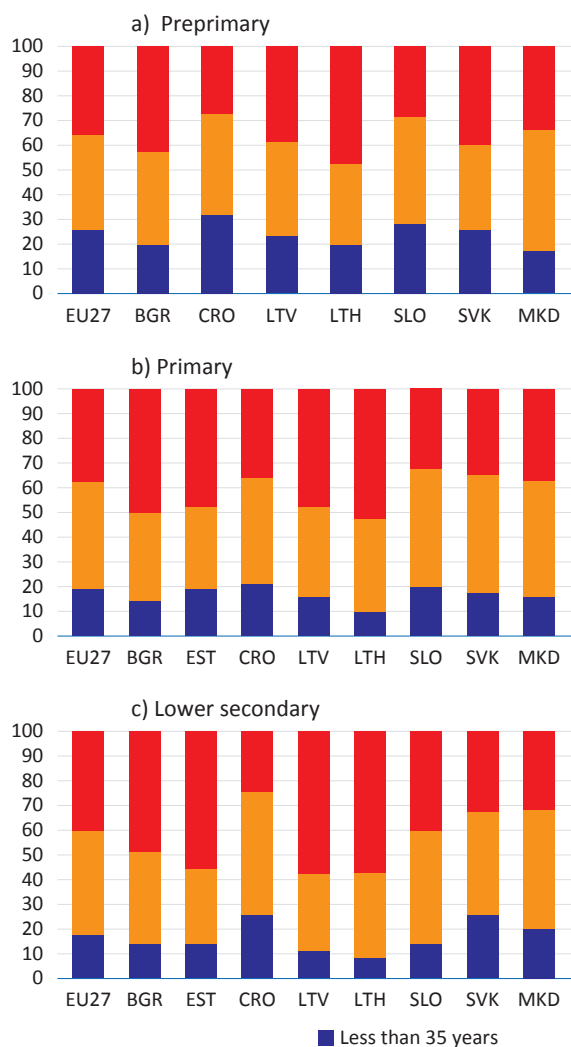
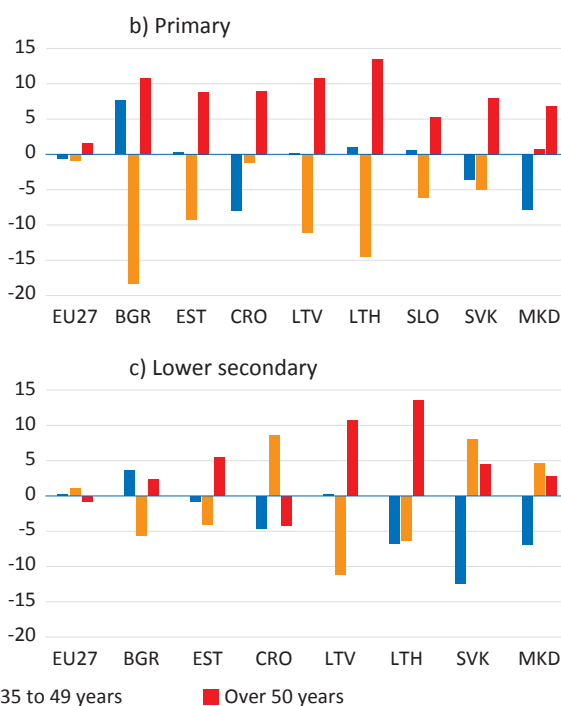


Figure 46. Change in the share of teachers by age group, 2013–2020



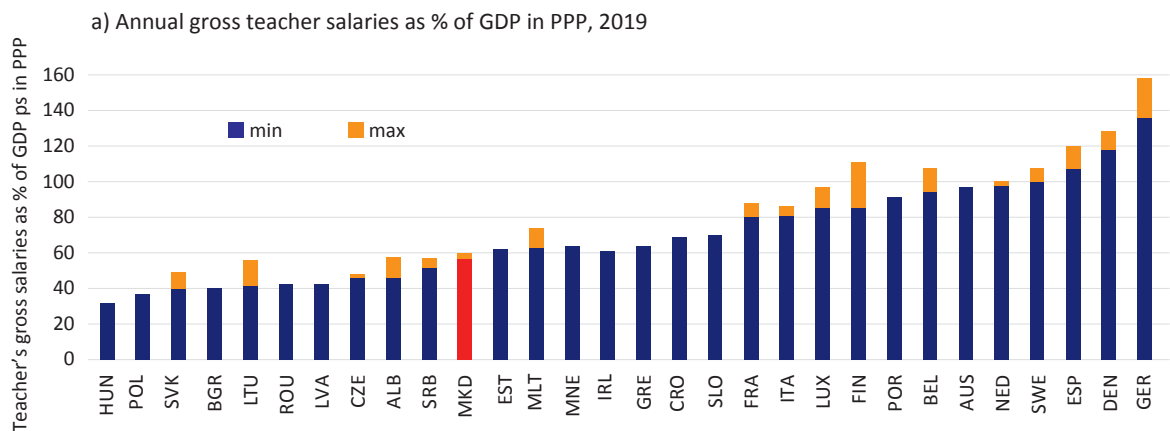
Source: Eurostat and World Bank staff own elaboration.

Note: Data for preprimary education in North Macedonia are from before 2020.

Teacher salaries in North Macedonia appear to be on par compared to regional peers, but outcomes are lacking. Considering teacher salaries as percentage of

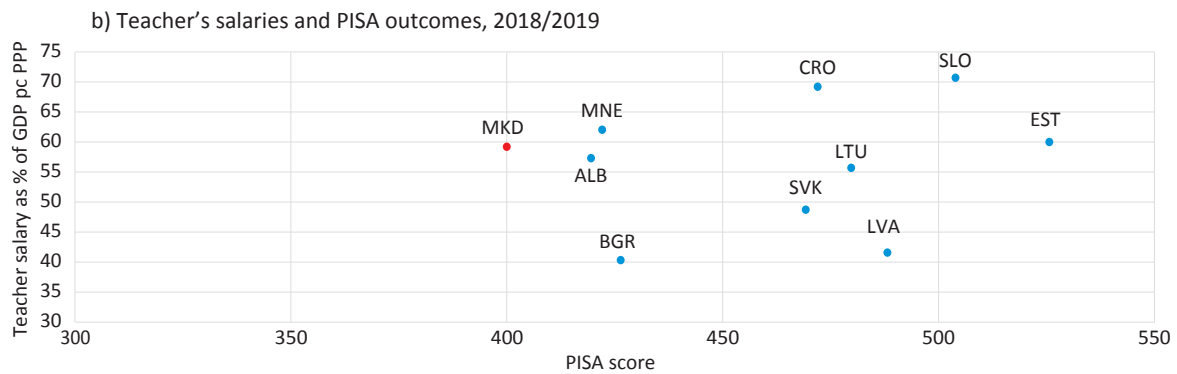
purchasing power parity (PPP) adjusted GDP per capita, salaries in North Macedonia stand below 60 percent of GDP per capita level (average for the EU-27 countries is 78 percent) (Figure 47a). Compared to regional Western Balkan peers, teacher salaries in North Macedonia are above the level of Albania, Serbia, and Bulgaria but lower than in some aspirational peers such as Croatia and Slovenia. On the other hand, if we compare teachers' salaries with education outcomes (Figure 47b), we observe that North Macedonia's PISA results are far behind comparator countries. Thus, it seems that teacher salaries are not the only determining factor to secure a high quality of instruction in schools. In this light, authorities should consider other incentives and support for teachers such as continuous professional development and career advancement stimuli.

Figure 47. Teacher salaries as a % of GDP and links to PISA outcomes



Source: Eurydice and World Bank staff own calculations.

Note: Minimum salaries refer to preprimary and maximum to upper secondary.



Source: Eurydice, PISA database, and World Bank staff own calculations.

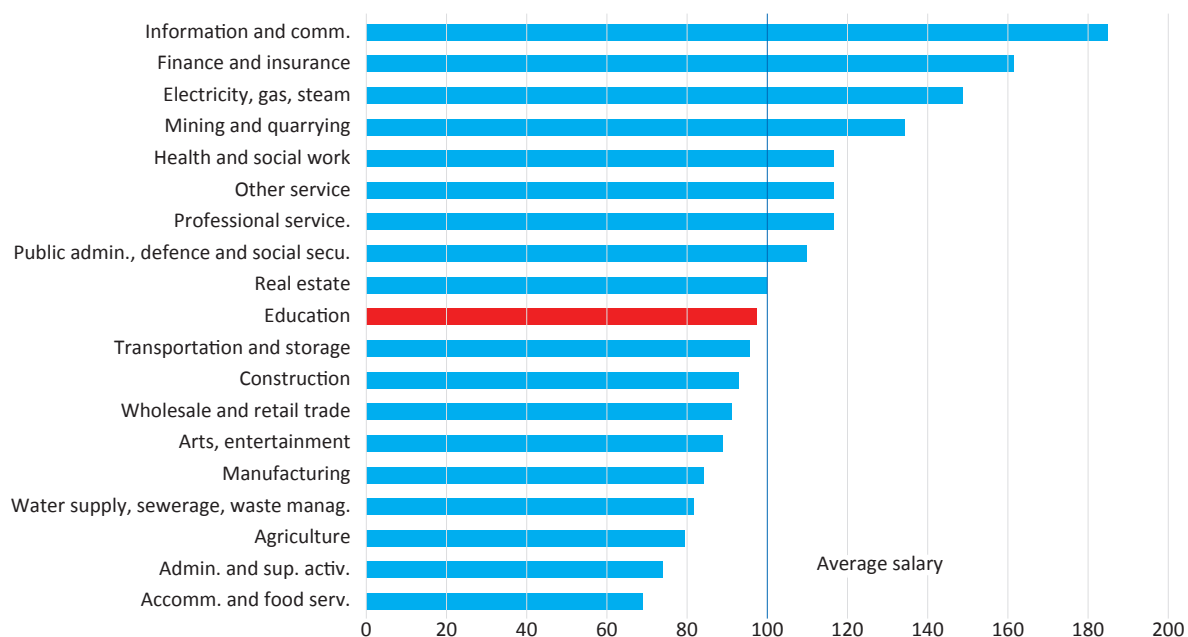
While salaries seem to be on par with regional peers, as salary progression is minimal, which may lead to demotivation of teachers and the attractiveness of the teaching profession among prospective students. Although starting salaries are important in attracting new teachers, they are not the only factor to consider. If salaries rise quickly, then a low starting salary may not necessarily be an economic disincentive to becoming a teacher. On average, in North Macedonia the difference between the statutory salary of a new teacher in primary and lower secondary and one that has 10 or 15 years of experience is just 5.1 percent and 7.8 percent, respectively.

While this low progressivity is on par with most of the regional peers, it is much lower compared to the other small Eastern European countries where the increase is between 20 percent and 50 percent. In addition, starting salaries can increase by around 50 percent only after 40 years of service. On average, it takes approximately 40 years for teachers to reach the top salary (Eurydice 2020⁴⁸)

This low salary progression due to experience or seniority coupled with a significant length of service can have a detrimental effect on attracting and retaining teachers and may affect their motivation. In fact, this was recognized by MoES and current reforms are directed toward introducing two new positions, that is, position of mentors and advisers with implications on their remuneration as well. Nevertheless, this policy change is still in its first year of implementation and the result of it is yet to be measured.

Salary competitiveness in education is on the average level compared with other sectors in North Macedonia (Figure 48). Salaries in education have increased by 24.4 percent in nominal terms between 2017 and 2021, which is on the level of the average increase across all sectors in the country. The average salary in education compared to the average overall wage in the country increased from 97 percent to 101 percent between 2018 and 2020 but has decreased in 2021 due to higher increases in other sectors such as information and communication, hospitality services, or entertainment, which drove up the average salary. Thus, it does not seem that salary competitiveness is the only or the main issue for the discontent of teachers, but there might be other issues such as the low progressivity of salaries due to seniority and merit and the lack of opportunities for career advancement or professional training. In fact, with the latest agreed salary increase of 15 percent, salaries in the education sector will be on par with the level of the overall public administration, health, and social work.

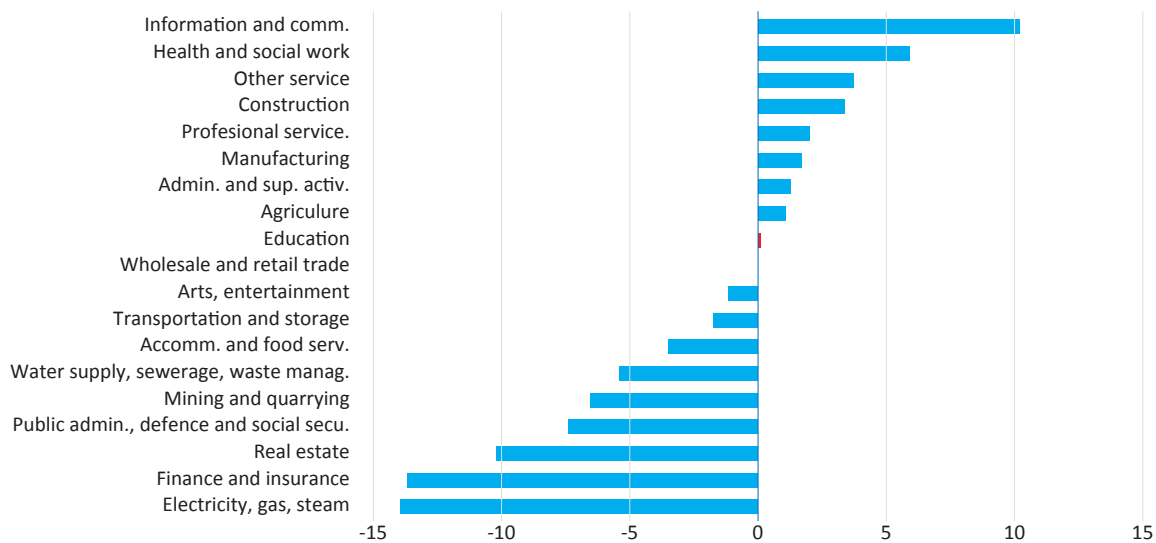
Figure 48. Wage level per sector compared to the average wage (2018–2021)



Source: State Statistics Office and World Bank staff own calculation.

⁴⁸ https://eacea.ec.europa.eu/national-policies/eurydice/sites/default/files/teacher_salaries_2018_19.pdf.

Figure 49. Change in wages compared to the average, 2018–2021



Source: State Statistics Office and World Bank staff own calculation.

CHAPTER 4.

A WAY FORWARD: GENERAL CONCLUSIONS

Education spending in North Macedonia has been declining over the past decade and its efficiency has been suboptimal. Going forward, efforts should be directed to improve the efficiency of the resources that are dedicated to education spending, making the most out of each denar spent while ensuring that proper funding is available for key functions within the sector.

To make the most out of the available education resources and close financing gaps, the country will need to explore ways to improve the system efficiency by consolidating the school network. Bearing in mind demographic changes, the optimization of the school network presents a cost-saving potential and an opportunity for more effective use of the existing infrastructure. The Government of North Macedonia is aware of this potential and has already started working on the optimization of the school network in primary education and revision of the financing formulas.

Spending on education over the past decade has been declining and its composition has been suboptimal. In view of the poor educational and overall human capital outcomes, going forward the country may need to consider increasing or redirecting spending in some parts of the system to improve outcomes. This will be a vital step to reverse the setbacks in human capital resulting from the COVID-19 pandemic and avoid further losses. Improving the composition of education expenditure and directing it toward areas that lead to the enhancement of human capital outcomes would therefore be essential while ensuring that such investment is consistent with the aspirations of a more equitable society. This implies giving higher priority to programs of particular benefit to vulnerable communities, such as children from minorities, rural areas, and disadvantaged socioeconomic backgrounds.

The introduction of the new formulas should not be prolonged. The new funding formulas should be introduced at all education levels since current formulas provide no incentives to restructure the network and maintain the 'status quo' of declining efficiency. The goal should be to convert the current unfunctional formulas into 'per student' formulas that incorporate performance-based financing, so that they begin to exert impact on decisions regarding the management of school networks and human

resources in education, particularly for municipalities. Both the optimization plan and the planned introduction of new funding formulas across all education levels are big steps for the system in a short time and are anticipated to correct some of the inefficiencies that exist in the system of education financing in North Macedonia.

Availability of adequate financing in the education sector will be vital to ensure that strategic national goals are met. In addition, properly identified (and preferably binding) funding needs, including a medium-term outlook for sector financing, will go a long way in ensuring a more sustainable financial management model. As part of this effort, the country will need to adopt a stronger package of accountability mechanisms with a clear division of roles and responsibilities between the local and central levels. Decentralized management structures afford much needed flexibility but require establishment of standards and introduction of mechanisms to increase overall accountability at the local level and the strengthening of cross-financing and coordination.

The structure of spending that threatens the sustainability of education expenditure will have to be reversed by providing additional resources to non-salary-related spending, which is vital for improving education outcomes. The high share of salary spending, which has increased even more during COVID-19, reduces the ability to finance other critically needed areas, including capital investments and professional development of the teachers. To this point there is a need to rebalance spending, ensuring that all non-salary-related spending needs are covered and accounted for in the education budget.

The teacher hiring process will need to be streamlined to avoid over-hiring while making teaching an attractive career choice. Decisions on hiring teachers have not followed a consistent economic rationale and throughout have not been merit based, resulting in significant pockets of teacher overstaffing in primary and secondary education. While the number of students has fallen over the last decade, this drop has not been accompanied by an equal drop in the number of teachers and classes, which again results in a significant loss of efficiency and disproportionately high costs, as mentioned earlier. To increase the attractiveness of the teaching profession, it is important to improve the progressivity and competitiveness of teacher salaries that could be financed, for example, by the savings created from rationalizing the overall number of teachers or by better allocating the existing teaching staff within the school network (as envisioned in the current school network optimization plan). This process should go hand in hand with the implementation of the legal provisions in the recently adopted law for teachers that stipulates mechanisms for promoting those teachers who perform well.

To avoid children and students being left behind, the country needs to ramp up enrolment rates to EU levels in preprimary, secondary, and tertiary education. Particular emphasis should be on ensuring that this effort reaches the most vulnerable segments of the society. Particular focus should be on solving the issue of out-of-school children. Expanding access to education needs to go hand in hand with improving the overall system efficiency of education by reducing dropout rates in secondary and tertiary education and long average times to completion in tertiary education as well as increasing the quality of education being offered at all levels.

In raising the quality, emphasis should be on equipping students with high-level cognitive and socio-emotional skills while ensuring that the learning process is enjoyable and engaging for students so that they become lifelong learners. As part of this effort, the curriculum must be delivered in a way to help students develop into critical and reflective thinkers as well as active and relevant participants in social and political life. The process of learning should be organized in a way which ensures that students' voices in school decision-making bodies are heard and that they are aware of the actions taken based on their feedback.

The Government needs to ensure that adequate resources are made available to introduce programs⁴⁹ for learning recovery and acceleration to reduce learning gaps in students from different socioeconomic background and learning losses caused by COVID-19. The implementation of a learning recovery needs to start with rapid diagnostic testing to identify students at risk of dropping out, students who are disengaged, students in poverty, and students who belong to disadvantaged groups. The objective of this type of measurement is to identify students with the highest learning loss and to help understand what students are missing, so that teachers can teach at the right level and cater to the specific learning needs of students. As part of this recovery, the country is advised to introduce 'catch-up' learning programs (especially for key competencies such as literacy and mathematics) through measures such as 'high dosage' tutoring, targeting primarily students from poor backgrounds. In the long run, part of the learning recovery steps used during COVID-19 should become permanent policies to identify children and youth at risk of disengaging with learning and not returning to school and provide them targeted support.

Finally, the country needs to prepare for future crisis by investing in system and human capacities. Going forward, this may include investment in digital infrastructure by expanding access to the internet in schools and portable computers for students, by upscaling digital skills of teachers and students and increasing the capacity of education institutions to design and implement digital pedagogy whether online or in person in the classroom. The initiative to expand digitalization can also include the introduction of a system-wide education platform (that is, one-stop shop) that will provide a modern and digital learning environment allowing students to access educational materials and track their learning progress. However, the embedding of resilience into education should involve not only diversification and modernization of the modes of delivery but also production of high-quality, well-trained teachers who can respond to the future demands of quality education. To ensure this, professional development of teachers, that is, the compulsory hours spent on training should be regularly financed by the national budget as well as the teacher career advance model needs to be enforced.

⁴⁹ World Bank has introduced a RAPID Framework for Learning Recovery and Acceleration which outlines five short-term, key policy actions: Reach every child and keep them in school; Assess learning levels regularly; Prioritize teaching the fundamentals; Increase the efficiency of instruction, including through catch-up learning; and Develop psychosocial health and well-being.

RECOMMENDATIONS AND REFORM OPTIONS

Recommendations linked to broader education reforms

- Ramp up enrolment rates to reach EU levels, especially in preprimary, secondary, and tertiary education.
- Improve the quality assurance mechanisms at all education levels so that they become an essential and regular element of accountability. This could involve improving data collection instruments and quality assurance practices, strengthening internal review processes (such as, the self-evaluation process of education institutions), and setting adequate follow-up procedures.
- Foster job-relevant skills in education and further strengthen the collaboration between education institutions and employers, especially in vocational and tertiary education.
- Reduce the gaps in learning outcomes between the top and bottom socioeconomic status groups, based on the place of living, resources available for learning from home, or language of instruction. The introduction of COVID-19 learning recovery programs for vulnerable students could be a first step in this process that could then be continued or expanded.

Recommendations to better streamline existing resources and increase education spending

- Any increase in the share of GDP spent on education should be preceded by adopting a series of measures to improve efficiency of spending (such as optimizing the school network, tightening the teacher hiring process and rationalizing the number of teachers, and providing incentives for LGs to improve management of education funds).
- Ensure effective application of the new funding formulas from preprimary up until higher education with performance elements and links to national priorities and perform ex post analysis of the reform.
- Revert the unsustainable structure of spending by providing additional resources to non-salary-related spending, including capital spending that needs to be covered and accounted for in the education budget (including medium planning), which is vital for improving education outcomes.
- Consolidate the school network and reduce or reallocate excess teachers in primary and secondary education to make spending more efficient. The savings from such actions can be used to increase the competitiveness and progressivity of teacher salaries and financing of teacher training programs.

- Ensure a stronger package of accountability mechanisms with a clear and transparent division of roles and responsibilities between the local and central levels, an increased level of coordination among institutions, and stronger oversight from MoES on achieving the desired education outcomes—with funding strings attached that leave some key decisions in the hands of the MoES.

Recommendations to improve the effectiveness of education spending

- Reduce the number of out-of-school children by improving enrolment in compulsory levels of education by offering financial and other type of support to families from vulnerable socioeconomic backgrounds through already established mechanisms such as the education allowance.
- Enforce the models for progressivity of teacher salaries and reward teachers who perform well.
- Improve student outcomes through a better use of existing resources; increasing spending without accompanying reforms may not lead to substantial improvements in student outcomes.

