

# Education quality and opportunities for skills development in Albania



An analysis of PISA 2000-2012 results



**WORLD BANK GROUP**  
**Education Global Practice**  
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# Abbreviations & Acronyms

<b>ESCS</b>	Economic, Social, and Cultural Status
<b>ECA</b>	Europe and Central Asia
<b>GDP</b>	Gross domestic product
<b>LSMS</b>	Living Standards Measurement Survey
<b>NES</b>	National Education Strategy
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OLS</b>	Ordinary least squares
<b>PIRLS</b>	Progress in International Reading Literacy Study
<b>PISA</b>	Programme for International Student Assessment
<b>TIMSS</b>	Trends in International Mathematics and Science Study
<b>UN</b>	United Nations
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization



# Executive Summary

**Albanian students improved their performance on PISA<sup>1</sup> reading, math, and science assessments between 2000 and 2012, a period over which access to upper secondary education expanded dramatically.** The improvements are equivalent to a quarter to half a year of schooling in math and science and more than one year of schooling in reading. The improvements were realized despite substantial increases in enrollment and the attendant changes in the PISA sample composition. The gross enrollment rate in upper secondary education was only about 40 percent in 2000, but increased markedly to 72 percent in 2009 and 83 percent in 2012. A spike in enrollment usually results in lower average student performance due to the inclusion of poorer and traditionally excluded students. In the context of a rapidly expanding education system, it is remarkable that Albania managed to improve its average PISA scores. It is even more notable that the improvement came from significant advancements made by low-achieving students.

**Albania's improved PISA scores coincide with the launch of intensive reform efforts in its education sector.** The Government of Albania initiated the education sector strategy formulation process in 2002, which resulted in the 2004 passage of the National Education Strategy (NES) and the first attempt to develop a long-term roadmap for the sector. The NES served as the catalyst for a range of reforms, including: improved teacher recruitment, compensation, and management; a revised curriculum for basic and general upper secondary education; enhanced transparency and accountability through reform of the Matura, the national student assessment; reduced price and improved textbook quality through a reformed procurement process; and provision of textbook subsidies to the poorest households. While it is beyond the scope of this report to determine a causal relationship between the range of policy reforms and improved PISA scores, this report shows that socioeconomic variables played an important role. Explanatory analyses show that the effect of education variables cannot be disentangled from the effect of socioeconomic variables. Furthermore, with economic growth averaging 4.9 percent per year from 2000-2012, a viable explanation is that the general improvement in economic conditions helped to raise the tide on all social indicators, including PISA performance.



In the context of a rapidly expanding education system, it is remarkable that Albania managed to improve its average PISA scores. It is even more notable that the improvement came from significant advancements made by low-achieving students.

**The share of students achieving at least a basic level of proficiency increased moderately from 2000-2012.** The performance of low achievers has improved since 2000, resulting in an upturn in the share of students reaching a minimum level of proficiency. In reading, the share of students performing below the “functional literacy” line decreased from 57 percent to 52 percent between 2000 and 2012, and from 64 percent to 61 percent in math during the same period. However, this still means that the majority of students are not able to understand or analyze basic texts or solve simple mathematical problems.

**Despite the upward trend, Albania’s overall performance remains low.** Albania’s PISA 2012 scores are the lowest in all of Europe and Central Asia (ECA) and among the lowest of all PISA-participating countries. Overall, Albania lags around one year of schooling behind countries like Bulgaria, Romania, and Serbia, and around two-and-a-half years of schooling (around 100 PISA points) behind the OECD average. Education quality was not only sustained but improved during Albania’s dramatic expansion of the education system in recent years, but the analysis shows that young people joining the labor market in the immediate future may not possess adequate skills to meet the demands of a modern and knowledge-based economy.

**The analysis of determinants of PISA 2012 scores was hampered by unreliable student-level data, which limited the analysis to PISA 2009 data.** According to OECD, the adjudication results concluded that the PISA Technical Standards were fully met in all countries and economies that participated in PISA 2012 with the exception of Albania. For example, Albania submitted parental occupation data that were incomplete and appeared inaccurate, since there was over-use of a narrow range of occupations. It was not possible to resolve these issues during the course of data cleaning, and as a result, neither parental occupation data nor any indices that depend on these data (such as the Index of Economic, Social, and Cultural Status, ESCS) were included in the international dataset. Due to the low validity of students’ background data in PISA 2012, this study relies mostly on the 2009 PISA survey for the analysis of household characteristics.

**Significant inequities are observed between student groups, but none of the student groups perform well, leading to the conclusion that education quality is poor across the country.** There is evidence of large disparities between groups of different socioeconomic status, geographical location, and gender (e.g., girls substantially outperform their male counterparts). However, none of the groups compare positively to OECD standards: for example, an Albanian student in the 80th percentile of performance in PISA reading scores would only be placed in the 45th percentile among students from OECD countries. Although students in private schools fare considerably better than their peers in public schools, the gap is fully explained by differences in socioeconomic characteristics (which are not subject to modification through policy reform) and access to better school resources (including qualified teachers). Every school can do much more to improve student learning outcomes and to elevate the results from this low base.

### **At the system level, social stratification and preschool education pose important challenges.**

An in-depth analysis offers two interesting conclusions. First, despite the fact that Albania is relatively homogeneous with respect to residents' socioeconomic status, the social stratification of schools (the homogeneity of schools in terms of socioeconomic status) is worryingly high, rendering Albania with one of the most stratified educational systems among PISA-participating countries. Second, the analysis finds that although attending preschool in OECD countries has a positive impact on PISA performance (even after controlling for several factors), this effect is nonexistent in Albania. One potential explanation is that the quality of preschools is significantly lower in Albania. An analysis that goes into more detail would be beneficial, but falls beyond the scope of this study.

### **An analysis of PISA math and reading “subscale” skills shows high variation in performance.**

PISA rotates the in-depth assessment of skills by subject area each time it is administered. For the years that PISA was administered in Albania, 2000 and 2009 focused on reading and 2012 focused on math, and PISA 2015 will focus on science. Compared with the average math and reading performance, results in Albania show higher variation across subscale assessments than in OECD countries. Students performed better in problems related to space and shape and not as well in problems related to data and statistics or change and relationships. In reading, students performed better with more traditional texts than on exercises involving texts contained in sample lists, graphs, or diagrams. Moreover, Albanian students are not good at relating information presented in a text or a mathematical problem to their own personal experiences.

### **Classroom practices show a low quality of teaching and learning strategies in Albania**

**compared to OECD and other ECA countries.** PISA 2009 offered the opportunity to assess which types of learning strategies (memorization, elaboration, control, or summarizing) were more commonly used by students and which types of teaching practices (discipline, classroom management, or ability to engage students) were typically used by teachers. The analysis finds that these factors play a significant role in determining learning outcomes, and it also identifies the importance of having teachers who attain at least a tertiary education.

### **The following policy recommendations emerge from this study:**

- 1 **Reach national consensus to improve overall education quality.** Student achievement as measured by PISA improved from 2000-2012, especially in reading. However, overall performance remains low and the majority of students are below the basic proficiency levels in both reading and math. Despite several reform efforts over the past decade, resource allocation to education remains inadequate, with little hope for increased public expenditures in the context of macro fiscal constraints. In the short term, the government is presented with the challenge of continuing to improve education quality while seeking efficiency gains in the sector. In the medium to long term, it is clear that comprehensive and concerted

reform is required to accelerate progress in the sector, starting with a national consensus to prioritize the enhancement of learning outcomes and ensuring skills development across the board. Without recognition that education reform presents a unique opportunity to produce a cadre of workers with competent and flexible skills, catalytic economic and social development will remain out of reach in Albania.

- 2 **Steer educational resources and qualified teachers to benefit the most disadvantaged students.** Some groups systemically lag behind. The most disconcerting trend is the widening gap between students from the highest and lowest quintiles of the OECD ESCS Index from 2000 to 2009, resulting in a performance gap equivalent to about two years of schooling in both math and reading. Furthermore, the gap between boys and girls is more than 60 points in reading, while the urban-rural gap is more than 50 points, equivalent to nearly one-and-a-half years of schooling. Although the entire education sector is resource constrained, more funding should be targeted to benefit boys, students from disadvantaged backgrounds, and those who live in rural areas. Rural schools may need extra school resources to make up for the gap in students' socioeconomic backgrounds, while incentives should be aligned to ensure that the best teachers are matched with the most difficult students. Related to this, the existence of overlapping catchment areas for schools and the growing number of small schools present opportunities to consider school rezoning options in a way that makes schools less stratified and promotes more equitable outcomes.
- 3 **Strengthen the effectiveness of teacher practices as this is a key driver of quality.** The analysis highlights the importance of effective teaching practices, student learning strategies (partially a product of teaching practices), and the positive impact of having a large proportion of qualified teachers in schools. Peer mentoring programs paired with classroom observations, teachers' professional development focusing on improving classroom effectiveness, and feedback systems for teachers could make the difference in strengthening classroom management techniques and promoting relevant pedagogic techniques.
- 4 **Expand coverage and monitor the quality of preschool education.** Preschool education has the potential to mitigate inequities early in life and level the playing field for disadvantaged students. PISA data show that an early start in primary school is strongly correlated with higher reading scores in Albania even after controlling for several factors. Yet an analysis of variance in access to preschool or starting primary education at age six presents disparities along socioeconomic quintiles, as well as between boys and girls. In the context of the government considering the introduction of grade 0 for inclusion in compulsory education, special efforts will be required to ensure that boys and students of low socioeconomic status are targeted for enrollment. Furthermore, the quality of early education should be enhanced and monitored to ensure that the "preschool effect" is attained in Albania.



Photo: Jutta Benzenberg

**5 Improve the robustness, reliability, and accessibility of data.** Albania is the only country whose PISA 2012 household data are not reliable, according to the OECD. As Albania prepares to participate in PISA 2015, including piloting instruments prior to spring 2015, mechanisms to ensure the quality of data collection are critical for evidence-based policy making to take place. International surveys such as PISA may be costly but they have the potential to help policy makers identify weaknesses in the education sector and thus should be exploited to their fullest.

# 1. Why is PISA important? An Overview of Albania's performance on PISA

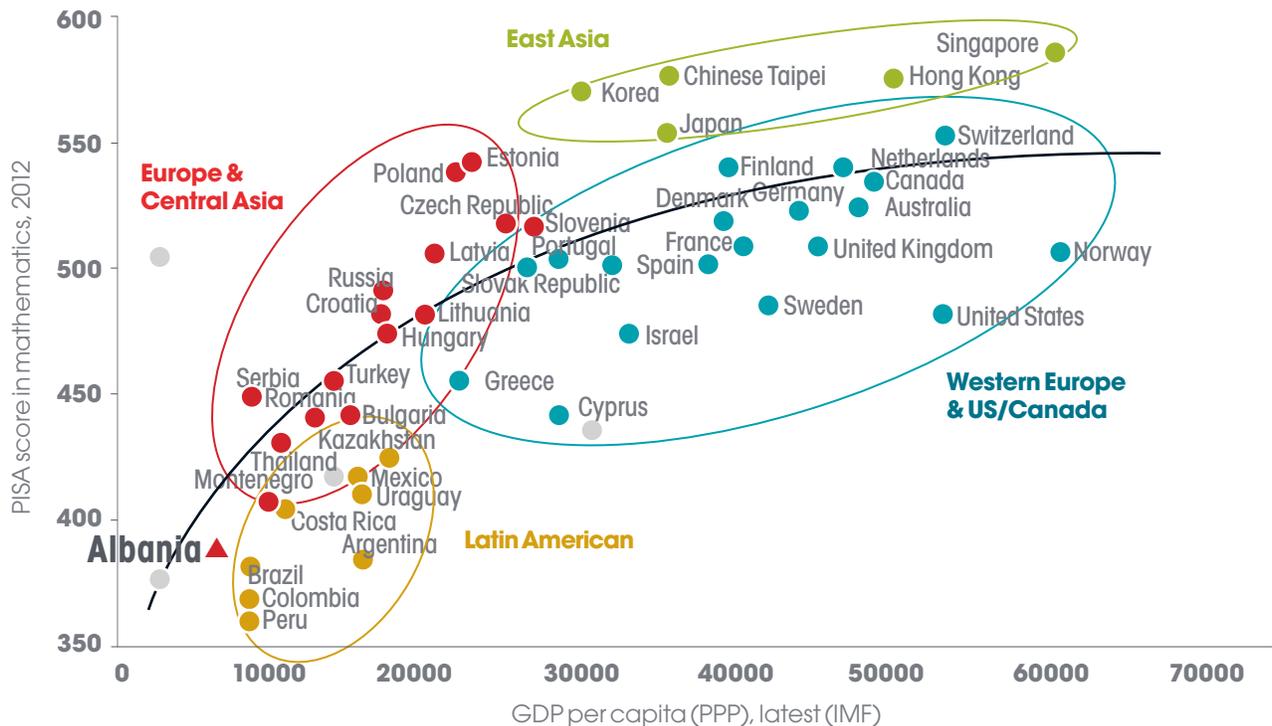


### Education and skills are critical for the development of both countries and individuals.

International evidence suggests that quality of education is one of the most important determinants of long-term economic growth.<sup>2</sup> Hanushek and Woessmann (2007 and 2012) looked at a wide range of student assessment surveys from 1960 onward, including the Trends in International Mathematics and Science Study (TIMSS), the Programme for International Student Assessment (PISA), and the Progress in International Reading Literacy Study (PIRLS). They estimated that an improvement of 50 points in PISA scores would imply an increase of 1 percentage point in the annual growth rate of GDP per capita.<sup>3</sup> Top-quality education systems are also associated with democratic governments. Beyond economic growth, education improves the living standards of individuals, as the more educated are able to acquire more and higher-order skills, making them more productive and employable and extending their labor market participation over their lifetime, which in turn leads to higher earnings and better quality of life. Formal schooling also contributes to development of socio-emotional skills like attention, motivation, self-confidence, and physical and emotional health, all important determinants of socioeconomic mobility. Individuals equipped with more education and skills are better prepared to become civically engaged, improve the democratic capital of their country, and create and make use of opportunities. Education is a key ingredient for reducing inequality and increasing shared prosperity. The analysis of detailed data is critical for understanding the determinants of education quality and can play an important role in shaping effective evidence-based education policy. The PISA database is a great resource in the pursuit of this analysis.

**PISA is a tool for measuring education quality across countries.** Introduced in 2000 by the Organisation for Economic Co-operation and Development (OECD), PISA is a worldwide study of 15-year-old school students' performance on three different disciplines: mathematics, science, and reading. PISA focuses on the competence of students and their ability to tackle real-life problems in those three disciplines and emphasizes skills that are critical for individuals' personal and professional development. PISA only assesses students who are in the education system, making it the most realistic snapshot available of a country's education system. However, if dropout rates are high, the results may not be representative of a country's cohort of 15-year-olds. PISA's scoring system is standardized so that the mean score for each discipline among OECD countries in year 2000 is 500 points, with a standard deviation of 100 points. According to OECD, 40 points in PISA is equivalent to what students learn in one year of schooling.<sup>4</sup> Albania's education system (see Box 1) was assessed in the PISA rounds of 2000, 2009, and 2012. Albania's participation in PISA allows us to benchmark it with other countries, measure the extent to which the country has succeeded in promoting education quality, and gauge whether system inequities have been reduced over time.

**The World Bank's PISA Country Series seeks to explore the wealth of information collected by PISA to analyze education systems and provide policy makers with options for evidence-based policy reform.** Due to its focus on policy, the Country Series aims to address key challenges in Europe and Central Asia (ECA) countries, with a focus on improving education quality and equity. The analysis in

**Figure 1** PISA scores and GDP per capita

Source: PISA 2012 and UNESCO 2012.

Note: The curve represents a logarithmic approximation of the scatter plot.

this report includes a descriptive section in which the performance of different subpopulations is discussed, followed by a section that identifies the determinants of PISA results. The latter section is divided into discussions of the roles of: (i) socioeconomic and family background factors; and (ii) factors that are heavily influenced by policy, including tracking, the availability of educational resources, teacher effectiveness (observed through teacher practices and learning strategies), school autonomy and accountability, and pre-primary education.<sup>5</sup> The standard framework of the Country Series is flexible enough to allow each report to reflect the country-specific context.

**Albania's PISA performance is slightly below what should be expected given its current level of economic development (Figure 1).**

For example, comparator countries such as Thailand and Serbia performed better on PISA 2012 math, despite having similar levels of GDP per capita. On the other hand, Albania's performance is on

par with expectations when considering its level of public expenditure on education per student. It is important, however, to note that Albania's public expenditures on education are as low as 3 percent of GDP, significantly less than that of countries with similar demographic structure and level of economic development. However, while a certain level of financial resources is important to ensure a minimum standard of quality, higher levels of expenditures and development do not necessarily produce better learning outcomes. In lower-middle-income countries like Albania, more investment can help improve quality but additional policy efforts are needed to realize efficiency gains and achieve sustainable improvements in learning outcomes.

**Albania's performance on PISA 2012 represents a slight improvement from 2009 in reading and science and a substantial leap in math (Table 1).** Since 2000, Albanian students have made significant progress in reading (especially between 2000 and 2009), partly because their performance

in this discipline was lower than that in math and science in the first round. Its math and science performance has gone up, but not at the same pace as seen in reading. While the trend shows positive developments since 2000, Albania started from a very low base and still has tremendous room for improvement.

**The improvements between 2000 and 2012 were realized despite substantial increases in enrollment and the attendant changes in the PISA sample composition.** In 2000, prior to the reorganization of the structure of Albania's education system, 80 percent of students participating in PISA were enrolled in upper secondary education. At that time, the gross enrollment rate at that education level was only 40 percent,<sup>6</sup> which implies that many 15-year-olds were out of school and thus excluded from PISA sampling. Because of selection biases,<sup>7</sup> it is likely that if the out-of-school children had been part of the PISA sample, the average performance would have been substantially lower. In 2009 and 2012, the share of students in upper and lower secondary was more evenly distributed (50 percent in upper secondary and 42 percent in lower secondary in 2012) and the gross enrollment rate in upper secondary had risen markedly, to 72 percent in 2009 and 83 percent in 2012. Combined with the fact that enrollment rates in lower secondary have historically been above 90 percent, this means that substantially more 15-year-olds were captured in the PISA sampling in 2009 and 2012. In this scenario of access expansion, it is remarkable that Albania managed to improve scores.

### Box 1 Albania's Education System

Albania has a population of 2.8 million people, the vast majority of whom are of Albanian ethnicity. Other ethnic groups include Romas, Greeks, and Macedonians. The education system currently serves approximately 630,000 students in pre-university education (including preschool). The school-age population is declining in Albania: in 2007, there were 700,000 pre-university students. Moreover, according to UN estimates, the population of those aged 19 and younger is projected to shrink from 32 percent of the total population in 2010 to 24 percent in 2025.

Albania's education system consists of: (i) preschool for children aged 3–6, which is free but not compulsory; (ii) compulsory basic education for children aged 6–15, which has two cycles—a lower cycle consisting of grades 1–5 and an upper cycle consisting of grades 6–9; (iii) general upper secondary education (lasting three years) and two levels of vocational education (lasting three and five years), with all graduates eligible to take the exam for admission into higher education; (iv) higher education, which offers short-cycle professional studies lasting two years; and (v) three-year bachelor programs, two-year master's programs, and doctorate programs that last three or more years. Education is compulsory until the end of grade 9. Finally, at the end of upper secondary education, pupils sit for the state Matura exam, the results of which are used both as an exit exam from upper secondary and as an entrance exam for university admission. All levels of education are offered by both public and private institutions.

Source: World Bank (forthcoming)

**Table 1** Albania's PISA performance by discipline, 2000-2012

	2000	2009	2012
Reading	349	385 (+36*)	394 (+9)
Math	381	377 (-4)	394 (+17*)
Science	376	391 (+15*)	397 (+6)

Source: PISA 2000, 2009, and 2012.

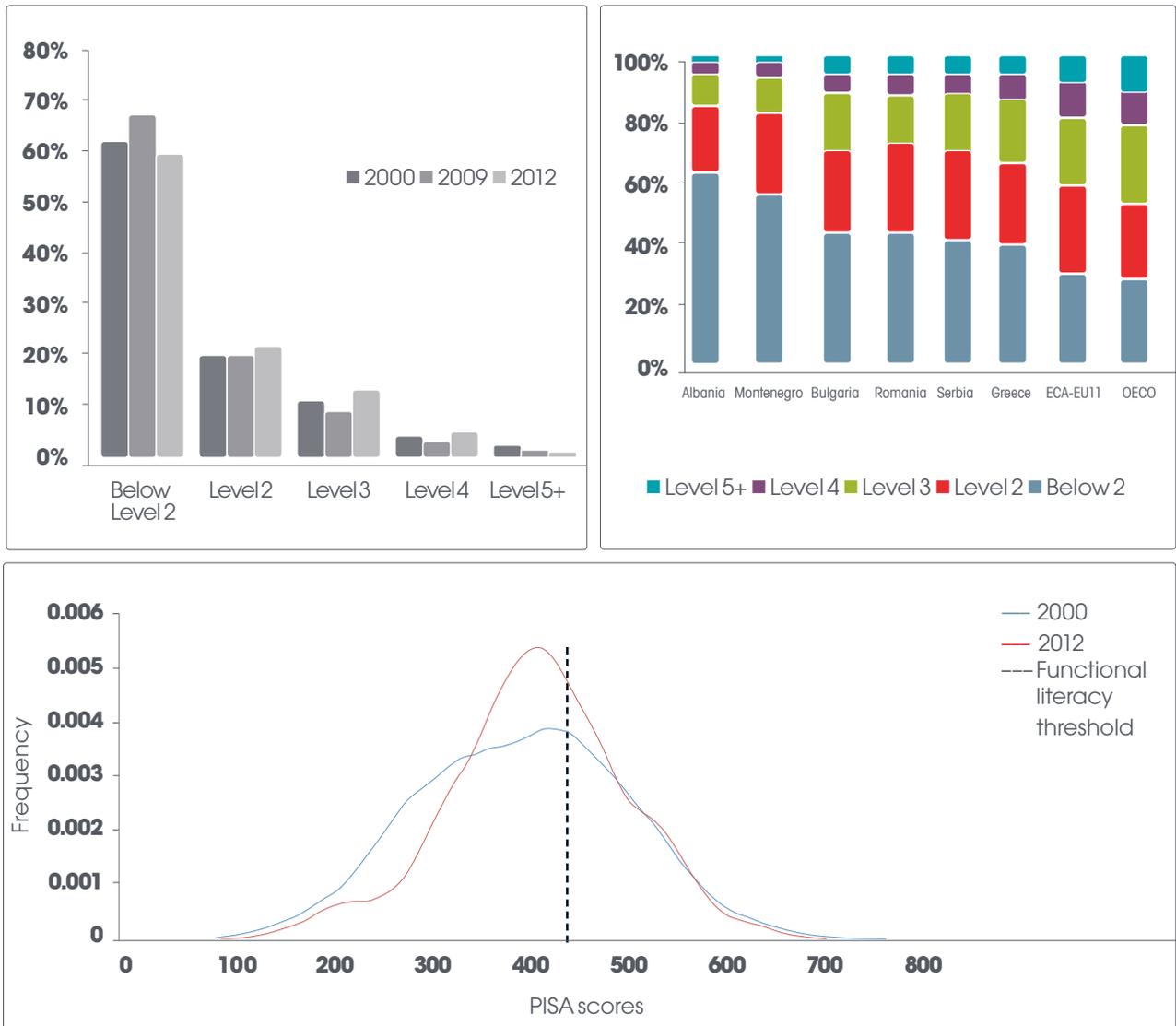
Note: Change in score from previous round is in parentheses, with \*indicating statistical significance.

**Albania's PISA score improvements coincide with the launch of intensive reform efforts in its education sector.** The government initiated the education sector strategy formulation process in 2002, which resulted in the 2004 passage of the National Education Strategy (NES) and the first attempt to develop a long-term roadmap for the sector. The NES served as the catalyst for a range of reforms, including improved teacher recruitment, compensation, and management; a revised curriculum for basic and general upper secondary education; enhanced transparency and accountability through reform of the Matura, the national student assessment; reduced price and improved textbook quality through a reformed procurement process; and provision of textbook subsidies to the poorest households. While it is beyond the scope of this report to determine a causal relationship between the range of policy reforms and improved PISA scores, this report shows that socioeconomic variables played an important role. The explanatory analyses below show that the effect of education variables cannot be disentangled from the effect of socioeconomic variables. Furthermore, with economic growth averaging 4.9 percent per year from 2000-2012, a viable explanation is that the general improvement in economic conditions helped to raise the tide on all social indicators, including PISA performance.

**The share of students below basic proficiency levels has decreased moderately since 2000.**

PISA categorizes scores in six levels of proficiency; students who score below level 2 in the reading and math tests are considered functionally illiterate and innumerate, respectively.<sup>8</sup> According to the 2012 data, 60 percent of 15-year-old students score below level 2 in math (Figure 2a), meaning that they are not able to understand and solve simple math problems, severely limiting their development and skill acquisition process. The long-term trend is a source of concern, with the share of students scoring below level 2 fluctuating from 64 percent in 2000 to 68 percent in 2009, before dipping in 2012. Based on PISA reading scores, about 52 percent of Albanian students are considered functionally illiterate, but there has been substantial improvement since 2000, when 70 percent of students were below level 2 in reading. Figure 2c depicts the evolution of math scores between 2000 and 2012 and illustrates that more students are pushing toward the functional literacy threshold. However, in some comparator countries, Romania and Bulgaria in particular, the share of students below level 2 fell a dramatic 10-16 percentage points between 2006 and 2012 in both math and reading (Figure 2b).

**Figure 2** Distribution of students by proficiency level in math: (a) Albania’s progress from 2000-2012; (b) Albania and comparators in 2012; (c) Evolution of math scores in Albania from 2000-2012

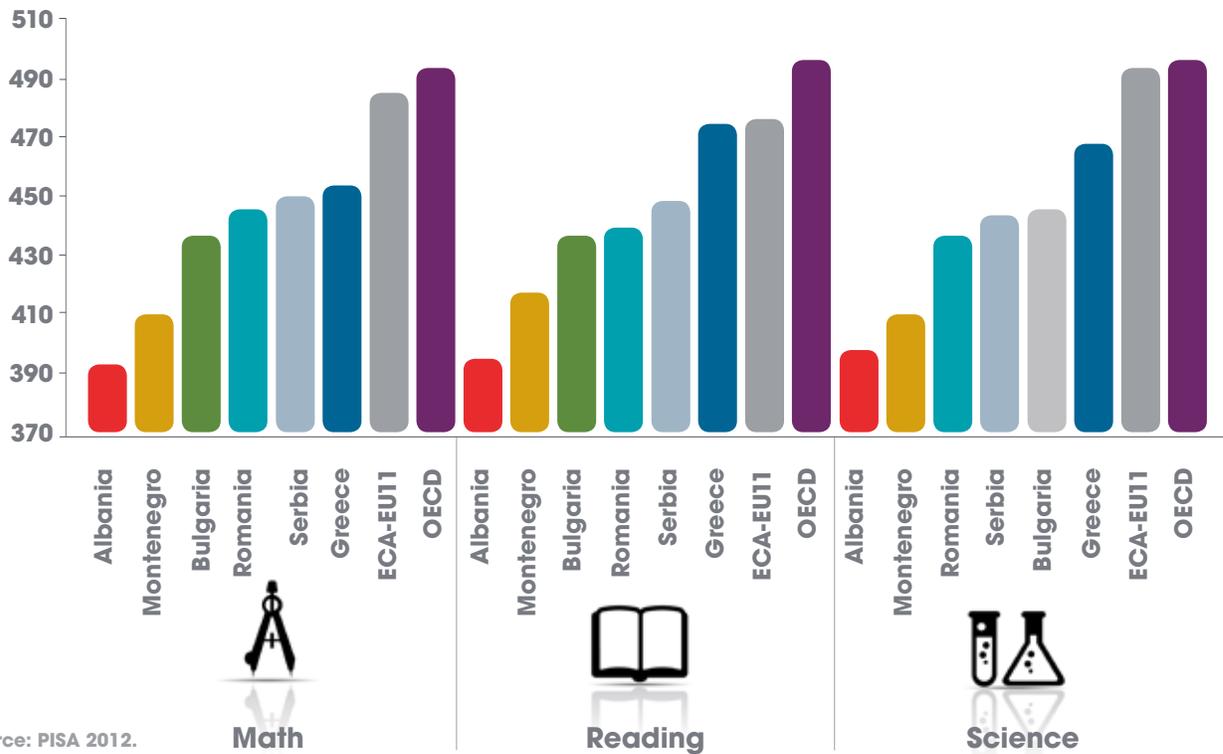


Source: PISA 2000, 2009, and 2012.

Despite improvements, Albania’s performance is at the bottom among regional comparator countries (Figure 3). Albania’s scores are the lowest among ECA countries in math and science and the second lowest in reading. A composite score of the three subjects shows that Albania lags around 15-30 PISA points behind Montenegro, around 40 PISA points behind Bulgaria, and over 100 points behind the OECD, with each 40 point gap equivalent to

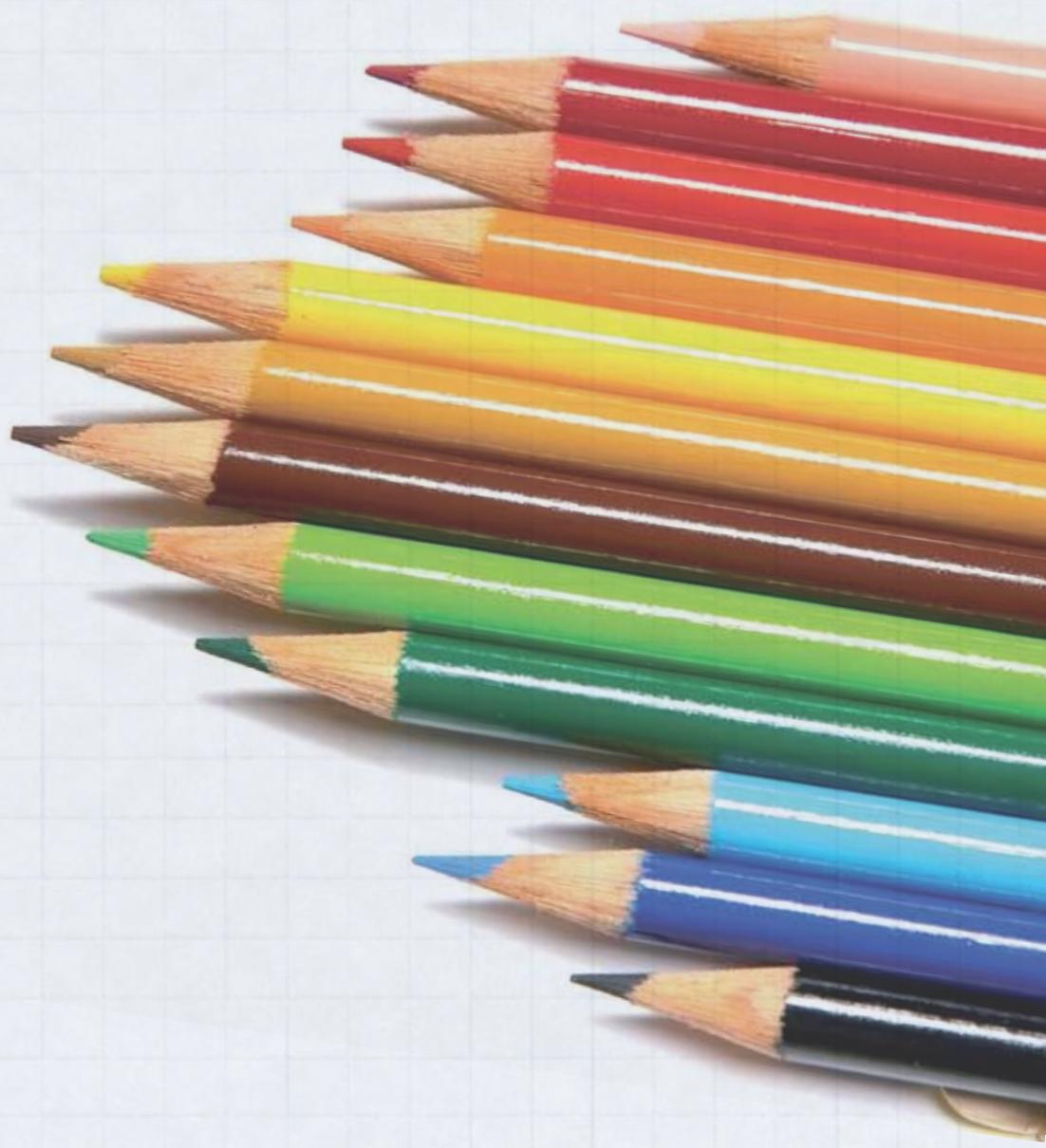
approximately one year of schooling. While some of the comparators have not improved their results substantially between 2000 and 2012, and Albania is the poorest in this group, the gap that Albania must breach remains vast.

**Figure 3** PISA 2012 scores for Albania and comparator countries versus ECA and OECD averages



Source: PISA 2012.

$$25 \times 3 = 75$$



# 2. Poor quality and persistent inequalities



**The determinants and drivers of education quality are analyzed in three dimensions: (i) individual characteristics; (ii) system-level policies; and (iii) school-level policies.** PISA scores are first used as a measure of education quality, and then the effects of variables in the PISA student and school questionnaires on learning outcomes are analyzed. We employ different analytical techniques, and broadly divide variables into individual and school characteristics, with subgroups of variables within school characteristics (peer characteristics, school resources and practices, and system variables). The unreliability of PISA 2012 data limits the analysis mainly to results from PISA 2009 and 2000 (see Box 2).

**Despite advances, the overall low student performance is likely to have a detrimental impact on long-term economic development and opportunities for intergenerational prosperity.** The quality of education across all groups is a critical concern in Albania. As noted above, the majority of students have performed below basic proficiency levels since 2000. Furthermore, a top student in reading in Albania – one who is above 80 percent of all Albanian students – performs below 55 percent of OECD students, making her a mediocre achiever in international comparison (Figure 4).<sup>9</sup> The picture is similar for math and indicates that the top students in Albania are still below most students in the OECD.<sup>10</sup> The poor skills acquisition demonstrated through the PISA results presents a crisis in the making for Albania's economic and social development prospects. The next section elaborates on the inequities in learning outcomes in the education system, to identify the groups most at risk.

**Box 2** PISA's Index of Economic, Social, and Cultural Status and PISA Data Validity in Albania

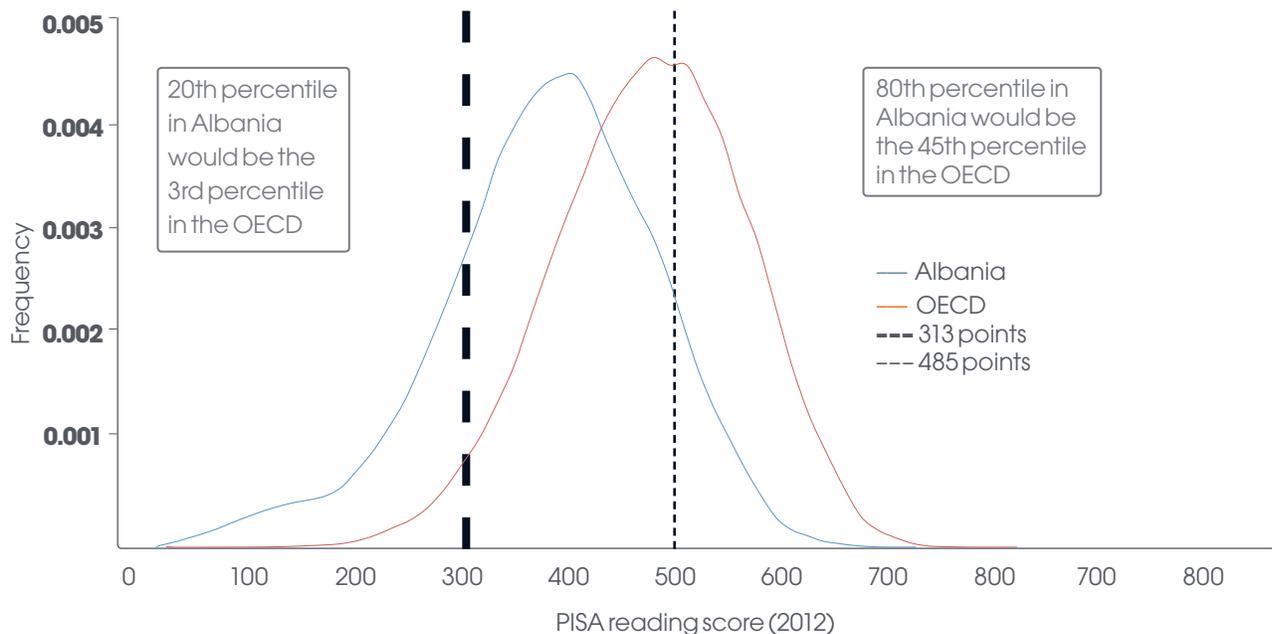
Created by OECD, PISA's Index of Economic, Social, and Cultural Status (ESCS) is a multidimensional measurement that takes into account information reported by students on their family's wealth and occupational, educational, and cultural background. It is derived from a combination of three other indices: (i) an index of the highest occupational status of parents, indicating not only labor market status, but also the type of job held by parents; (ii) an index based on the highest level of parental education in years of schooling; and (iii) an index of family home possessions, which itself consists of a combination of the family's possessions (such as cars, bathrooms, or technological devices) and educational resources (such as desks, computers, textbooks, and the number of other books), as well as the type of cultural possessions (such as the type and genre of books or the works of art). The ESCS Index is the most important determinant of student achievement and is therefore crucial for analysis of the quality of education.

According to OECD, the adjudication results concluded that the PISA Technical Standards were fully met in all countries and economies that participated in PISA 2012 with the exception of Albania. For example, Albania submitted parental occupation data that were incomplete and appeared inaccurate, since there was over-use of a narrow range of occupations. It was not possible to resolve these issues during the course of data cleaning, and as a result, neither parental occupation data nor any indices that depend on these data (such as the ESCS Index) are included in the international dataset.

Due to the low validity of student background data in PISA 2012, this study relies mostly on the 2009 PISA survey for the analysis of household characteristics.

Source: OECD 2014.

Instead of catching up with the country's average, students from disadvantaged backgrounds are lagging farther behind. This has serious implications for the country's development and for social cohesion, as education is a key mechanism for intergenerational mobility.

**Figure 4** Distribution of PISA 2012 reading scores in Albania and the OECD

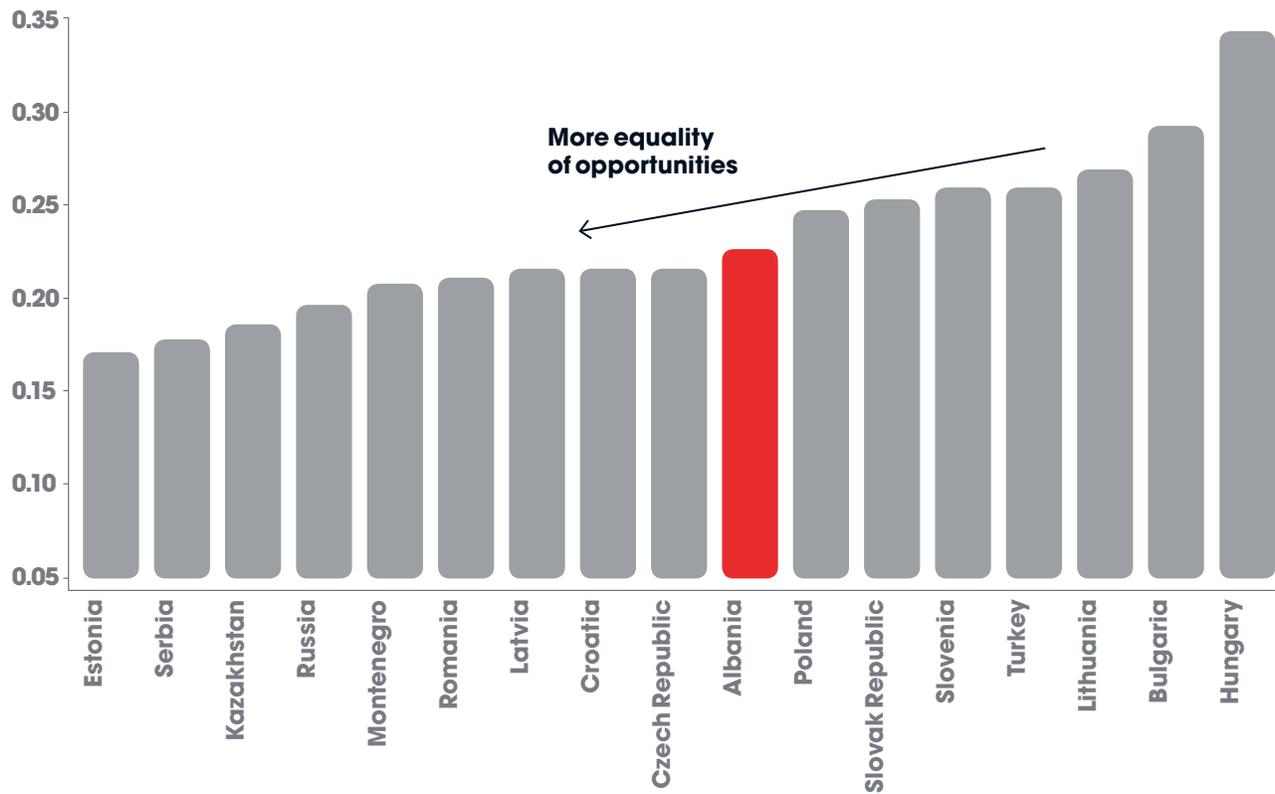
Source: PISA 2012.

## Inequities in Albania: Which students lag behind?

**The overall equality of opportunities in Albania is comparable to that of other countries in the region.** The index of equality of opportunities (Figure 5) shows the importance of individual characteristics (gender, age, and socioeconomic status) in determining student performance. In Albania, using 2009 PISA data, individual characteristics explained around 22 percent of the differences in reading achievement, which places the country around the ECA average.<sup>11</sup>

**Performance trends show a widening gap between the average student and students from disadvantaged backgrounds between 2000 and 2009.** Although Albania has relatively low income inequality, there is a significant gap between the performance of students in the highest and lowest quintiles of the ESCS Index (see Table 2): 93 points in reading and 78 points in math, equivalent to about two years of schooling in both cases. The gap also reflects differences in access to high-quality school

resources, preschool attendance, and better teaching practices in the classroom.<sup>12</sup> While high in absolute terms, this difference is similar to that found in countries such as Serbia, Croatia, and Montenegro. However, without sustained improvements for all, disadvantaged students are unlikely to increase their future living standards. While average score growth is important, it is also crucial to foster improvements among the bottom 40 percent of a country's student population.<sup>13</sup> Between 2000 and 2009, students in the bottom 40 percent in terms of socioeconomic status made advancements in reading at a level on par with the country's average (Figure 6). In math, the performance of the bottom 40 percent of students fell more than the average did. These results present a gloomy picture: instead of catching up with the country's average, students from disadvantaged backgrounds are lagging farther behind. This has serious implications for the country's development and for social cohesion, as education is a key mechanism for intergenerational mobility.

**Figure 5** Index of equality of opportunities: Albania and other ECA countries, 2009

Source: Authors' calculations based on PISA 2009 .

Note: The index is the percent of the variance in reading scores explained by the main predetermined characteristics (age, gender, and socioeconomic status) in a linear regression (Ferreira and Gignoux 2011).

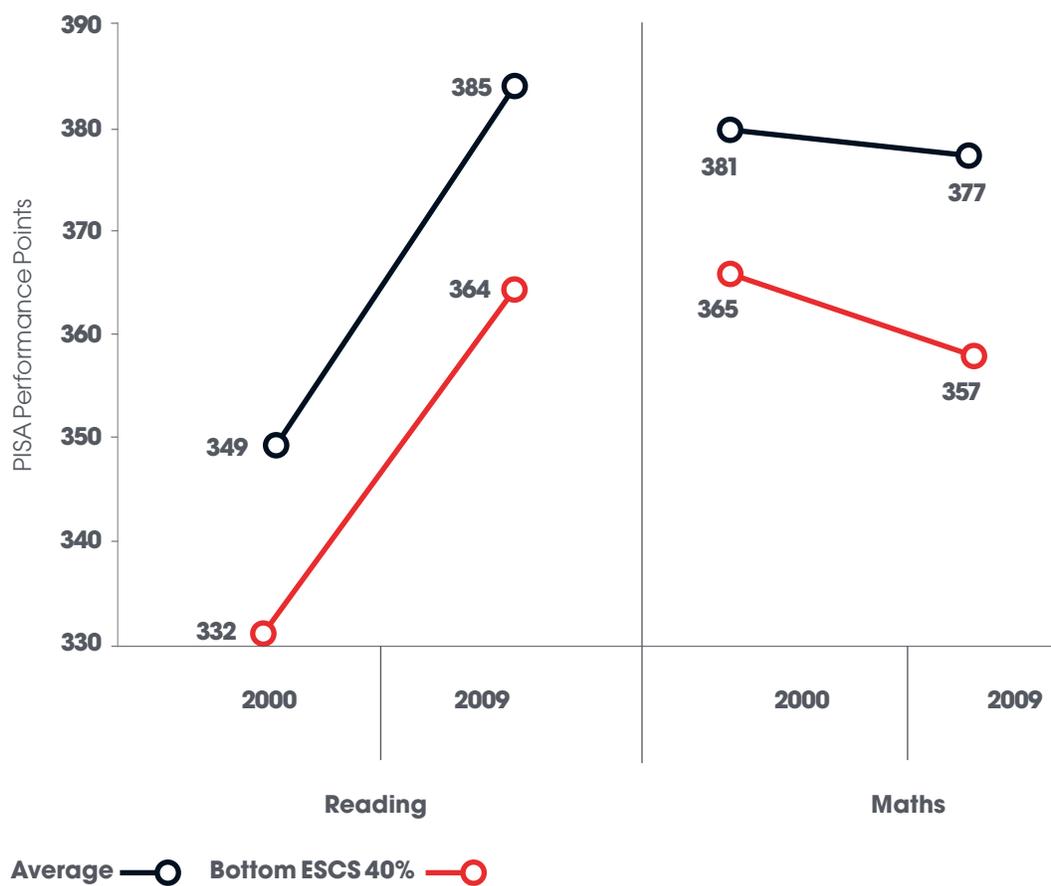
$$2 + 3 + 3 = 8$$

abcdefghijklmnop

**Table 2** Difference in PISA 2009 performance between top and bottom socioeconomic quintile groups in Albania

	Reading			Math		
	Top 20%	Bottom 20%	Difference	Top 20%	Bottom 20%	Difference
<b>Albania</b>	439	346	93	421	343	78
<b>Bulgaria</b>	502	360	142	496	369	128
<b>Greece</b>	534	436	98	517	423	94
<b>Croatia</b>	517	434	83	502	420	82
<b>Montenegro</b>	451	364	87	443	360	83
<b>Romania</b>	472	375	97	468	384	84
<b>Serbia</b>	486	408	78	493	402	91

Source: Authors' calculations based on PISA 2009.

**Figure 6** Albanian students' performance on math and reading in PISA 2000-2009 by socioeconomic group

Source: PISA 2000 and 2009.

# The significant gender gap in reading poses an important challenge for Albania; its education system is failing to provide quality education to all of its students, but it is particularly failing boys.

## Gender disparities

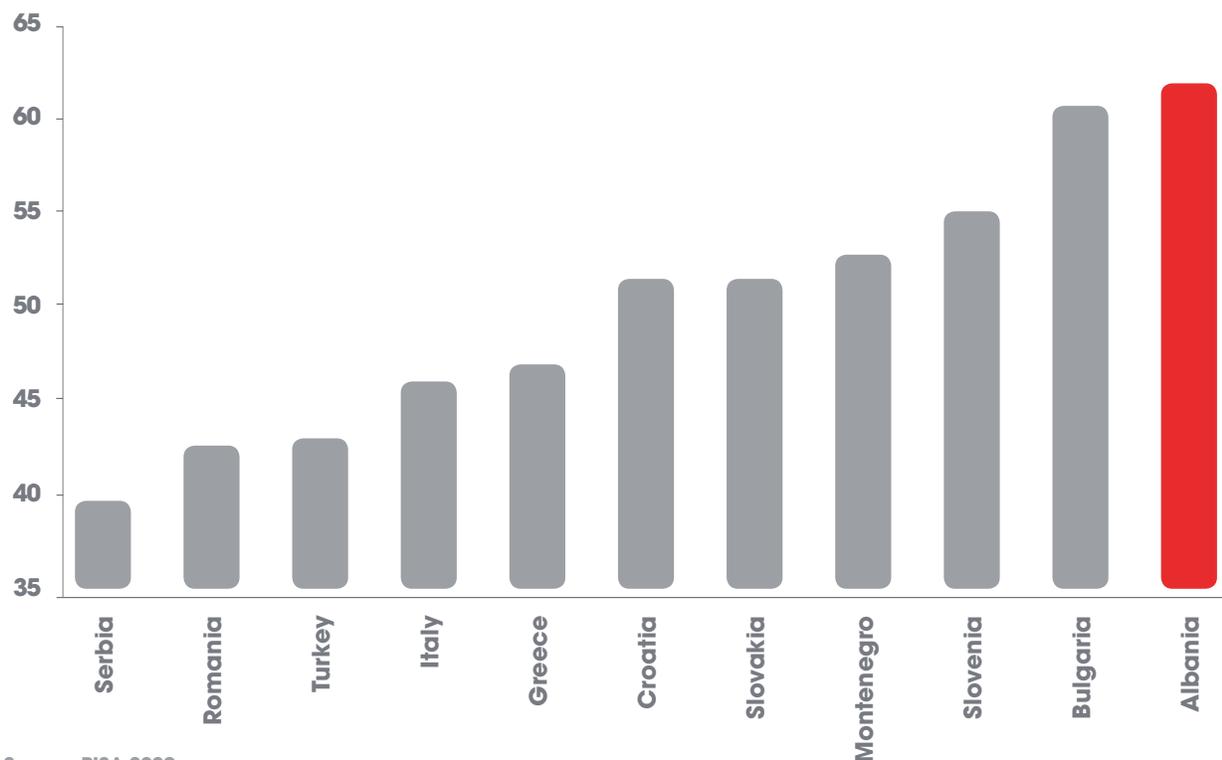
**Albanian girls outperform boys by over 60 points in reading, equivalent to 1.5 years of schooling.** In most countries, girls fare better than boys in reading and tend to perform at equal levels in math. In 2009, the gender gap in reading in Albania was the highest among all comparators in the region (Figure 7). The large difference in performance between girls and boys in reading has remained fairly stable while the gap in math has fallen, from 20 points in 2000 to 10 points in 2009. The significant gender gap in reading poses an important challenge for Albania; its education system is failing to provide quality education to all of its students, but it is particularly failing boys. The average OECD student scores approximately 140 points above the average Albanian boy, a difference of approximately 3.5 years of schooling.

**The gender gap emerges in students' access to and age of starting preschool.** Only 48 percent of Albanian boys have more than one year of preschool while 58 percent of girls do. In OECD countries, the share of children who attended more than one year of preschool is 70 percent and the gender gap

is only 2.5 points. Moreover, while 78 percent of OECD students start formal basic education at the age of six or younger, only 49 percent of Albanian students did so in 2009. The gender gap in Albania is also prominent in this dimension: only 44 percent of boys start education at six or younger versus 54 percent of girls. In OECD countries, there is no such gap. Most importantly, PISA data show that an early start is strongly correlated with higher reading scores in Albania, even after controlling for several factors, including socioeconomic status, age, grade, gender, teacher practices, learning strategies, and quality of educational resources. Starting primary education one year early accounts for an increase of approximately 9 points in PISA reading scores.<sup>14</sup>

## Urban-rural disparities

**The urban-rural gap is substantially higher than that found in other countries.** In 2009, the urban-rural gap in reading was 54 PISA points, almost 1.5 years of schooling. In math and science, the gaps were slightly less severe, but not less worrying: 43 and 39 points, respectively, equivalent to roughly one year of schooling.<sup>15</sup> The average urban-rural gaps

**Figure 7** Gender gap in reading, PISA 2009, selected countries

Source: PISA 2009.

among ECA countries are 38 points in reading and 32 points in math, which are high but significantly lower than in Albania. Similar to the socioeconomic status gap, the urban-rural gap reflects differences in access to better quality schools. The urban-rural gap presents a critical challenge for Albania, as over 45 percent of its PISA sample live in rural areas, substantially higher than the 30 percent average across all participant countries and the 37 percent average of ECA countries. Hence, Albania has a higher share of its population achieving very poor results. The change from 2009 to 2012 cannot be analyzed because of the unreliable data in the latter PISA round.

## Public and private schools

**The gap between students in private and public schools is largely explained by differences in household characteristics and school resources.** In the PISA 2009 sample, 11 percent of students in Albania attended private schools. The

difference in reading outcomes between students in private and public schools is equal to 64 PISA points (equivalent to one-and-a-half years of schooling), and is fully explained by socioeconomic characteristics, availability of educational resources in school, and the proportion of qualified teachers (Table 3).<sup>16</sup>

## The Albanian diaspora

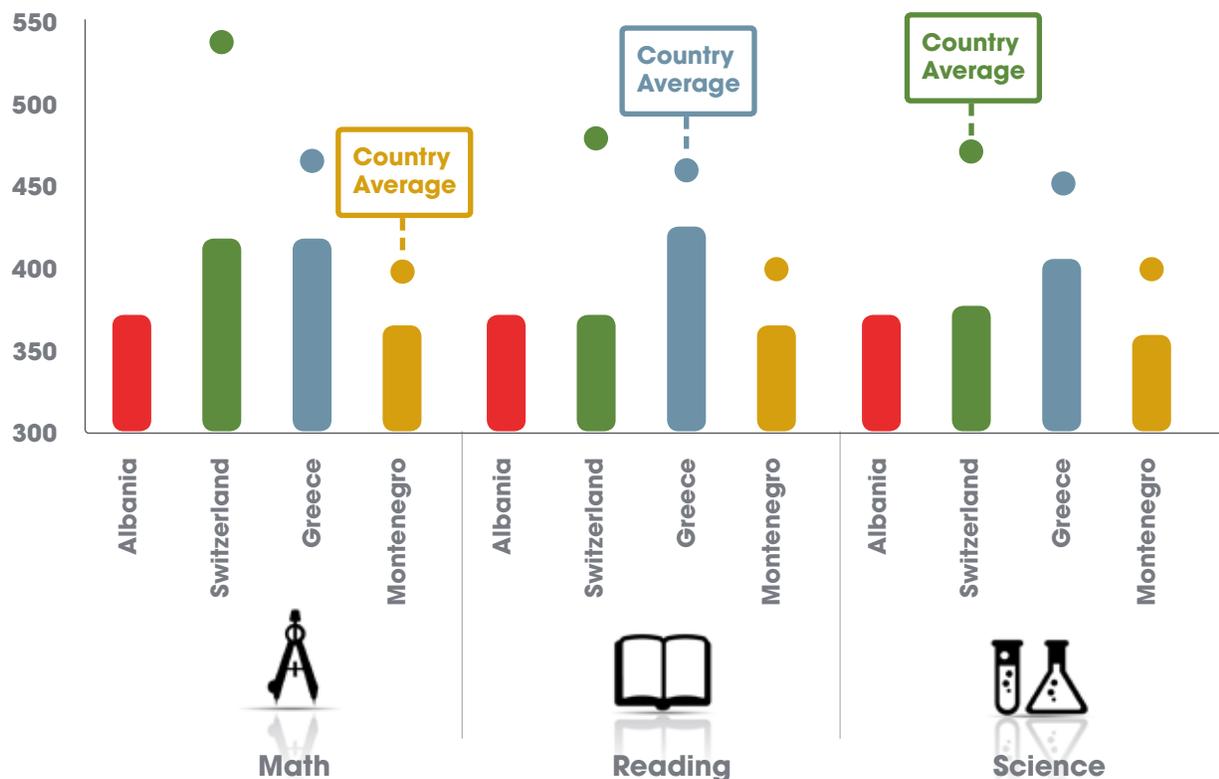
**In Greece and Switzerland, the Albanian diaspora gets slightly better results than students in Albania, but this is not the case in Montenegro.** At 29 percent, Albania's emigration rate is among the highest in Europe.<sup>17</sup> The highly educated follow the same trend, with an emigration rate of 27 percent. The trend was particularly acute in the 2000s, when the overall emigration rate rose by more than 9 percentage points. PISA data allow the identification of children who reside in another country but were either born in Albania or have at least one parent born in Albania. Figure 8 shows how the Albanian diaspora fares in Switzerland,

**Table 3** Characteristics of student by school type in 2009

	Public Schools	Private Schools
Average reading score (PISA 2009 score)	378	442
Father working full-time (%)	56.0	72.2
Mother working full-time (%)	27.7	46.4
Highest parental education (years)	12.1	13.5
Teachers with higher education (%)	77.5	95.2
Index of Quality of Educational Resources	-0.92	0.69

Source: PISA 2009.

Note: Index of teaching practices and learning strategies are normalized at the OECD level. Index of socioeconomic has a full-sample average of -0.55 and a standard deviation of 1.21. The index of quality of educational resources has a full-sample average of -0.28 and a standard deviation of 1.21.

**Figure 8.** The PISA 2009 performance of the Albanian diaspora

Source: PISA 2012.

Greece, and Montenegro, the countries with the largest number of recent Albanian immigrants. In all three countries, Albanians perform below the host country's average. However, in Switzerland and Greece, despite scoring substantially below the host country average, immigrants still perform above the average of Albania, while Albanians in Montenegro fare worse than the Albanian average. The socioeconomic status of students in Albania does not seem to be different from that of immigrant students in Greece or Montenegro. However, the socioeconomic status of Albanian immigrants tends to be slightly higher in Switzerland than that of students in Albania.

## The importance of learning from peers

**The peer effect is relatively strong in Albania, which is an important consideration in the context of a declining student population.**

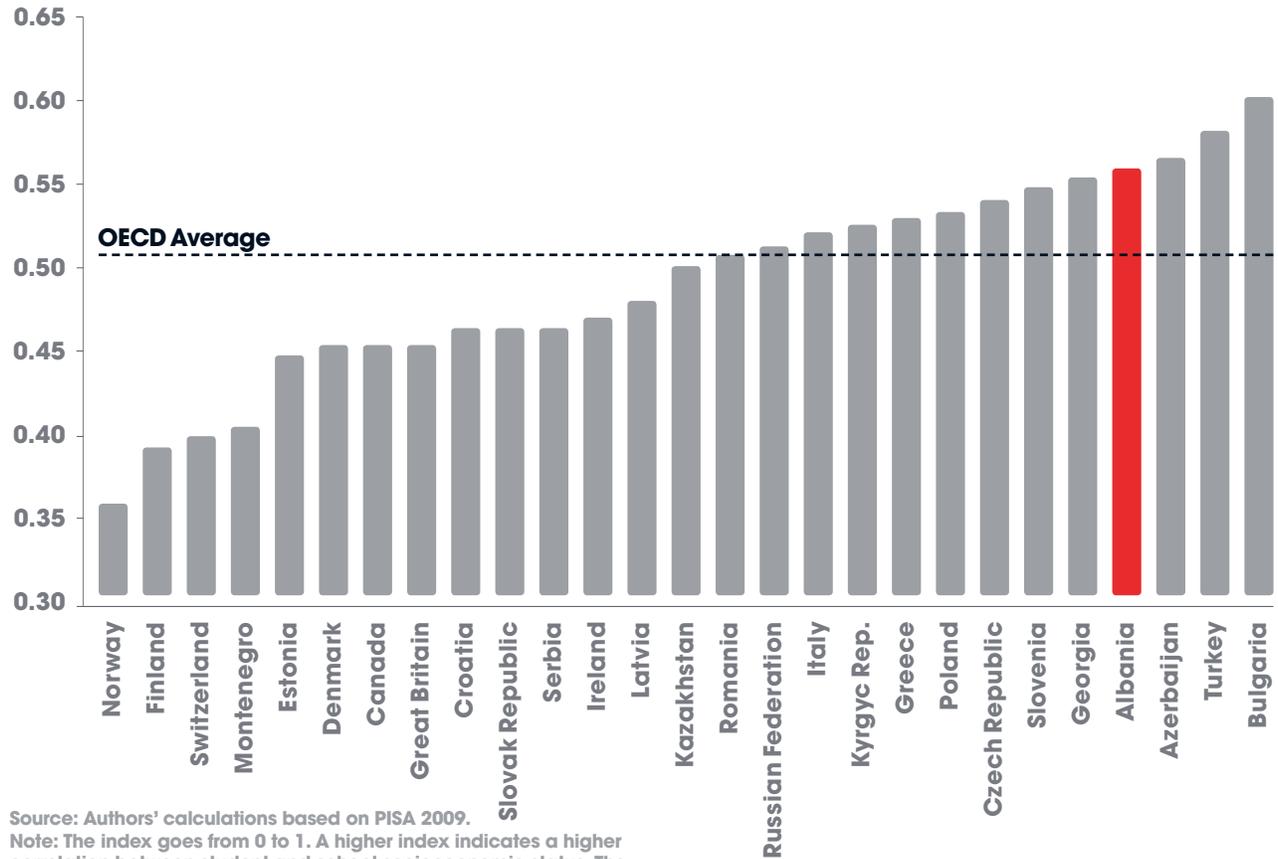
The previous analyses examined the importance of individual characteristics, which explain 22 percent of score differences in reading, about the same as ECA's average of 23 percent. Individual characteristics averaged at the school level (i.e., peer characteristics) also explain part of the differences in reading scores.<sup>19</sup> Jointly with individual characteristics, peer effects explain 29 percent of the variation in reading scores in 2009. Although this is not high compared to other countries in the region, it suggests that students' performance is influenced by their peers. Data from a recent school mapping exercise, although unofficial, suggest that there is a network of small schools in Albania. This peer effect on student learning should be taken into account as the government explores options for rezoning schools in the context of a declining student population.

**Social stratification in Albanian schools is high compared to other countries (Figure 9).**

We define the Index of School Social Stratification as the correlation between the PISA individual socioeconomic status and the average socioeconomic status at the school level.<sup>20</sup> In a world without social stratification (thus an index equal to zero), families from different socioeconomic backgrounds would randomly settle across the country and students from different backgrounds would study together, making schools more diverse. However, households tend to co-locate in neighborhoods with other households similar to them, and students tend to attend school with peers who have similar socioeconomic status as a result of spatial inequalities. It should be noted that the best performing countries in PISA tend to have less stratified education systems.

**Even though large socioeconomic disparities cannot be resolved in the short term, policies can address school stratification.**

As seen above, the peer interaction that takes place in school plays a very important role in determining children's achievement. In Albania, despite relatively low income inequality at the national level, students from similar backgrounds tend to cluster into the same schools. This may be the result of an explicit choice of parents who prefer their children to be surrounded by children of similar socioeconomic backgrounds, but may also happen as a consequence of other factors, such as the location in which each group lives or an exam that streams students into different tracks. The school network in Albania is such that 69 percent of the schools have two or more other schools in the same catchment area, while 13 percent have one other school. Even in rural areas, 68 percent of the schools have at least one other school

**Figure 9** Index of School Social Stratification in PISA-participating countries, 2009

Source: Authors' calculations based on PISA 2009.

Note: The index goes from 0 to 1. A higher index indicates a higher correlation between student and school socioeconomic status. The figure includes a selected number of PISA-participating countries.

Cognitive skills gaps start emerging early and inequalities in access to preschool perpetuate learning gaps.

in the same area. This provides policy makers with an opportunity to promote social integration and consequently improve education in most parts of the country. International evidence shows that systems that stratify students according to socioeconomic status increase the inequality of student performance without improving average performance levels.<sup>21</sup>

### Early childhood policies

A “preschool effect” on student learning, observed in OECD countries, is not present in Albania. The reading performance gap between students who did not attend preschool and those who attended more than a year is 32 points (and 14 points comparing no preschool with one year of preschool), significantly below the gap in OECD countries (66 points) but not far from regional comparators such as Croatia (28 points) and Slovenia (40 points). After controlling for other factors (such as socioeconomic status, age, grade, and gender), the positive impact

of having attended more than a year of preschool falls to 5 points, which implies that part of the effect of attending preschool is mixed with the effects of other characteristics. Although the data do not allow for a clear-cut answer as to why the effect of preschool is not as strong in Albania, one possible explanation lies in the quality of programs provided. Analysis beyond of the scope of this study is needed to answer this question, but global evidence shows that providing quality preschool education is important for promoting children's social, emotional, physical, and cognitive development; it also increases school readiness, which helps learning (Heckman and LaFontaine 2010; Heckman 2008; Engle et al. 2011). Cognitive skills gaps start emerging early and inequalities in access to preschool perpetuate learning gaps. In addition to quality issues, Albania also faces a challenge with access and equity. The Living Standards Measurement Survey (LSMS) 2012 data allow for disaggregation by consumption quintiles, and show enrollment rates varying between 20 percent (for the poorest) and 48 percent (for the richest).<sup>22</sup>

## How Do Classroom-Level Practices Affect Learning?

**PISA offers the opportunity to fully explore one subject area every three years, even though all three subjects are assessed every time PISA is administered.** PISA seeks to assess not merely whether students can reproduce knowledge, but also to examine how well they can extrapolate from what they have learned and apply it in unfamiliar settings, both in and outside of school. The detailed test of “subscale” skills of a given subject area is an

in-depth assessment with a larger set of questions. The detailed assessment was on reading in 2000 and 2009, on math in 2003 and 2012, and on science in 2006. The 2015 round will focus again on science. Thus for Albania, two detailed assessments on reading and one detailed assessment of math are available.

### Math skills in PISA 2012

**The PISA math 2012 subscale assessment measured individuals' ability to formulate, employ, and interpret mathematics in a variety of contexts and content areas.**

In PISA, the concept of mathematical literacy includes: (i) mathematical reasoning; (ii) usage of mathematical concepts, procedures, and facts; (iii) tools to describe, explain, and predict phenomena; and (iv) the role that mathematics plays in the world and the need to make well-founded judgments and decisions needed by constructive, engaged, and reflective citizens. Furthermore, mathematic literacy as defined by PISA not as an attribute that an individual has or does not have; rather, it can be acquired to a greater or lesser extent, and it is required in varying degrees in society. PISA seeks to measure not just the extent to which students can reproduce mathematical content knowledge, but also how well they can extrapolate from what they know and apply their knowledge of mathematics in new situations. The questions faced by students are framed in four real-world context categories: Personal, Societal, Occupational, and Scientific. Box 3 illustrates a typical math question from PISA 2012.

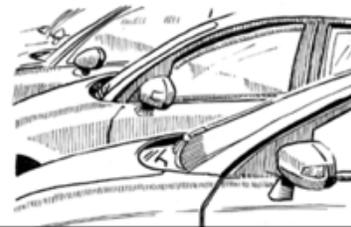
**Box 3** Sample PISA 2012 Math Problem: Which Car?

The following problem was part of PISA 2012's main survey. The first question requires interpretation and falls in the "uncertainty and data" content category while the other two questions measure "quantity" and require students to employ mathematical facts.

**WHICH CAR? – a unit from the PISA 2012 main survey****WHICH CAR?**

Chris has just received her car driving licence and wants to buy her first car. This table below shows the details of four cars she finds at a local car dealer.

Model:	Alpha	Bolte	Castel	Dezal
Year	2003	2000	2001	1999
Advertised price (zeds)	4 800	4 450	4 250	3 990
Distance travelled (kilometres)	105 000	115 000	128 000	109 000
Engine capacity (litres)	1.79	1.796	1.82	1.783

**WHICH CAR? – QUESTION 1**

Chris wants a car that meets **all** of these conditions:

- The distance travelled is **not** higher than 120 000 kilometres.
- It was made in the year 2000 or a later year.
- The advertised price is **not** higher than 4 500 zeds.
- Which car meets Chris's conditions?

- A. Alpha
- B. Bolte
- C. Castel
- D. Dezal

**WHICH CAR? – QUESTION 2**

Which car's engine capacity is the smallest?

- A. Alpha
- B. Bolte
- C. Castel
- D. Dezal

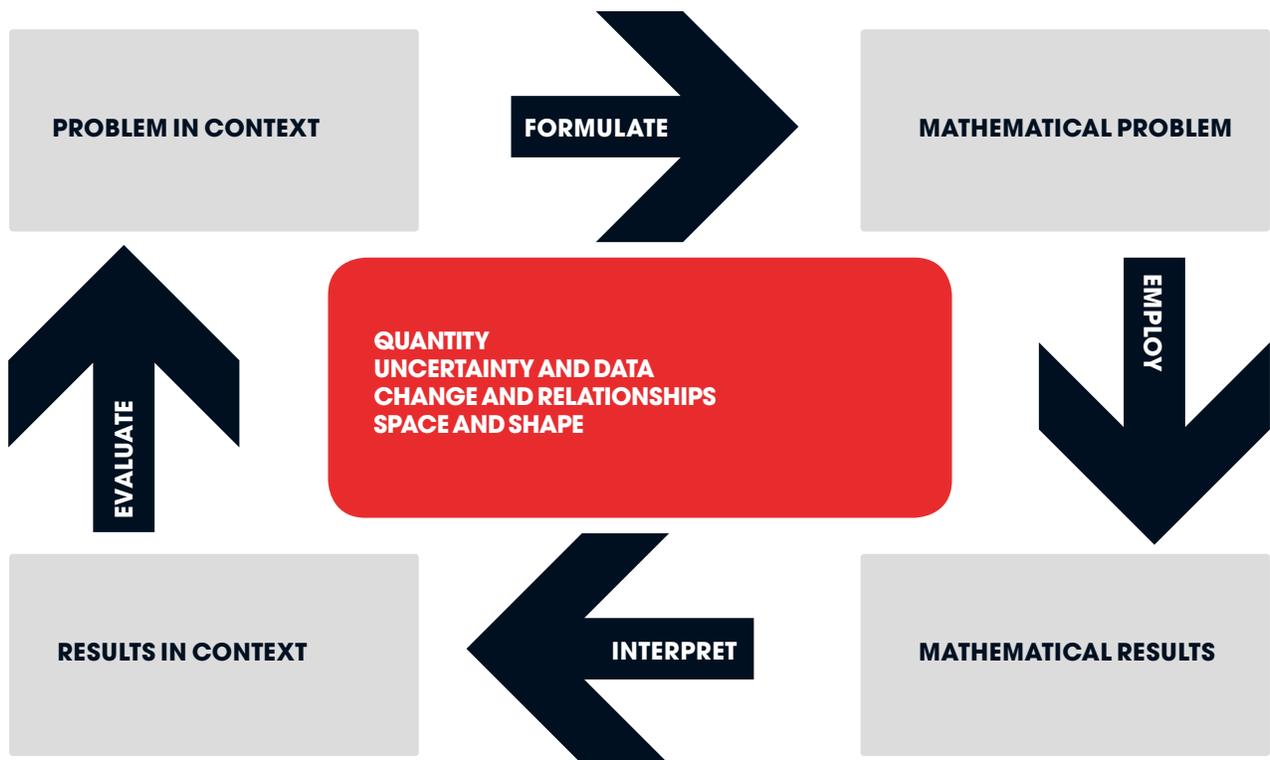
**WHICH CAR? – QUESTION 3**

Chris will have to pay an extra 2.5% of the advertised cost of the car as taxes.

How much are the extra taxes for the Alpha?

Extra taxes in zeds: .....

The problem's difficulty level is rated at 327.8 points for question 1, 490.9 points for question 2, and 552.6 for question 3. In Albania, 80 percent of students were able to reach the level of difficulty of question 1 (on the math average). However, this figure dropped dramatically to only 13 percent for question 2 and less than 3 percent for question 3. In contrast, in OECD countries, 96 percent of students solved questions at the level of difficulty of question 1, 47 percent for question 2, and 25 percent for question 3.

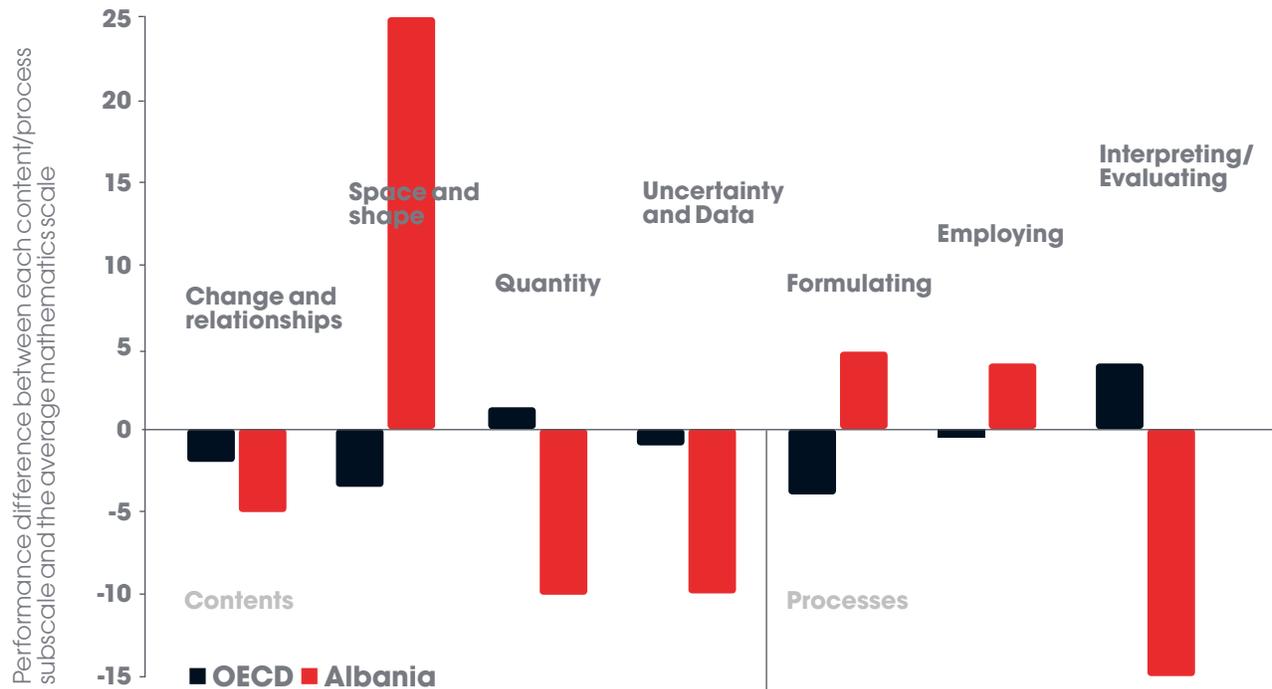
**Figure 10** Math contents and process categories in PISA

Source: OECD 2014.

The PISA math framework is a sophisticated tool for connecting student's mastery of mathematical processes and contents. The math subscale assessment evaluates capacity in four content categories (Figure 10): quantity (incorporates the quantification of attributes of objects, relationships, situations, and entities), uncertainty and data (understanding messages embedded in data, and appreciating the variability inherent in many real processes), change and relationships (temporary and permanent relations among objects and circumstances), and space and shape (phenomena encountered in patterns, object properties, positions, representations, visual information, navigation, and dynamic interactions). Figure 10 also shows a schematic of the stages faced by a student when solving a real-life problem through the mathematical modelling cycle. The action begins with identifying the problem in context and finishes when the results of the problem are found in a context and again are reflected in the problem

context. This process involves four skills defined by PISA as “processes,” assessed in 2012 as: formulate a mathematical situation according to the concepts and relationships identified, employ mathematical facts, procedures, and reasoning to obtain results (usually involving calculation, manipulation, and computation), interpret the results in terms of the original problem to obtain the “results in context,” and finally, evaluate the outcomes and their reasonableness in the context of the problem.<sup>23</sup>

Albanian students perform significantly better in content related to space but have difficulties relating math problems to real-life situations (Figure 11). Compared with the average math performance,<sup>24</sup> Albania's results show a high variation across subscale assessments compared with OECD countries. Relative to overall performance, students in Albania perform well in problems related to space and shape, usually related to geometry, but underperform in subscales

**Figure 11** PISA 2012 performance on different math subscales compared to each group's average performance

Source: PISA 2012. Note: Albania's average score is 394 and OECD's average score is 494

of change and relationships, uncertainty and data, and quantity. Results in processes subscales show that students underperform when they need to use contextualization skills to relate the problems to real-life and everyday situations.

## Reading skills in PISA 2009

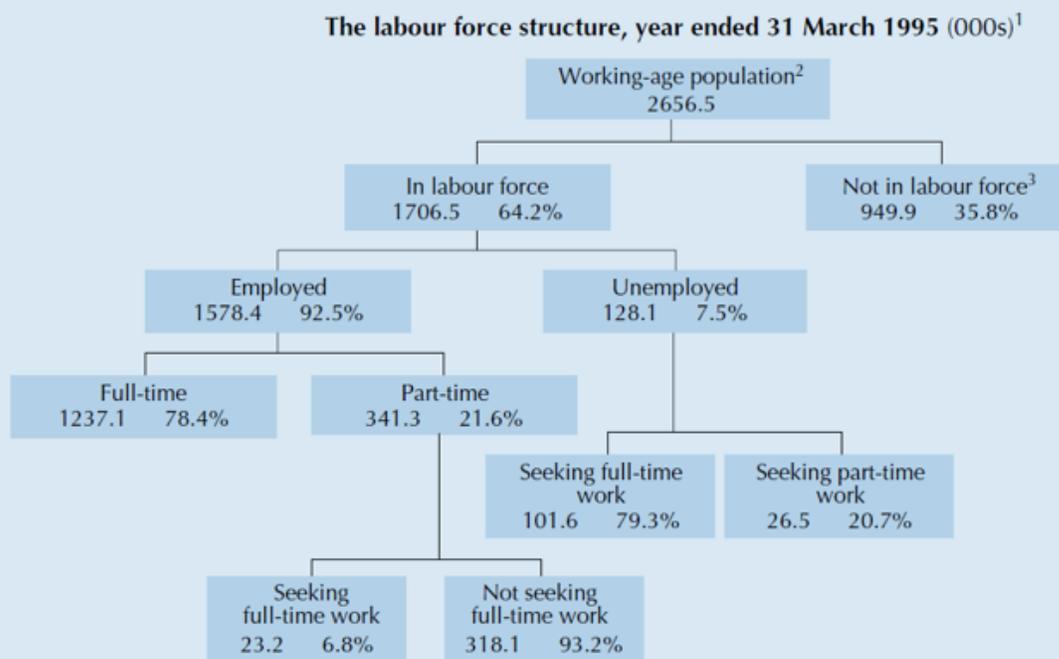
**The PISA 2009 subscale assessment of reading skills measured students' ability to actively, purposefully, and functionally apply reading in a range of situations.** PISA defines reading literacy as understanding, using, reflecting on and engaging with written texts to achieve one's goals, to develop one's knowledge and potential, and to participate in society. Understanding refers to the reader's ability in constructing meaning from text; using refers to the kind of reading that is directed toward applying information in a text to an immediate task; and reflecting on means that readers relate what they are reading with their thoughts and experiences.

**The PISA reading framework is built on three major characteristics: texts, aspects, and situations.** Although texts are differentiated in different characteristics (medium, environment, type, and format), performance on text format is the only one reported in PISA through two formats: continuous texts (sentences organized into paragraphs, which may fit into even larger structures) and non-continuous texts (smaller sentences, usually in sample lists, graphs, diagrams, or catalogues), although there are also mixed and multiple texts. Aspects are measured as PISA reading subscales with three categories: access and retrieve (skills associated with finding, selecting, and collecting information), integrate and interpret (which involves understanding the relationships between different parts of a text or making meaning from something not stated in the text), and reflect and evaluate (which involves drawing on knowledge, ideas, or values external to the text). Finally, situations intend to maximize the diversity of content included in

**Box 4** Sample PISA 2009 Reading Question: Labor

The following question was part of PISA 2009's reading assessment. It is an example of non-continuous text; the subscale skill measured is the capacity to retrieve information. The question asked was: "How many people of working age were not in the labor force? (Write the number of people, not the percentage.)"

The tree diagram below shows the structure of a country's labour force or "working-age population". The total population of the country in 1995 was about 3.4 million.



1. Numbers of people are given in thousands (000s).

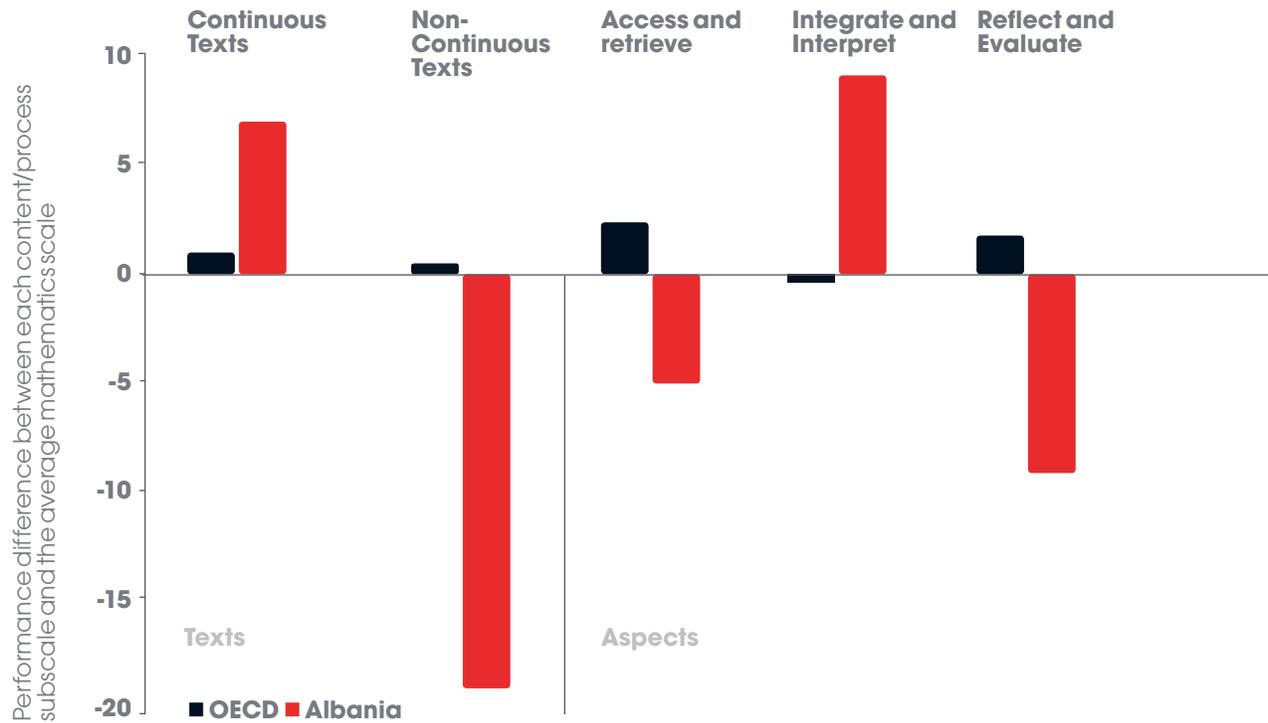
2. The working-age population is defined as people between the ages of 15 and 65.

3. People "Not in labour force" are those not actively seeking work and/or not available for work.

Source: D. Miller, *Form 6 Economics*, ESA Publications, Box 9453, Newmarker, Auckland, NZ, p. 64.

Partial credit was given to students who answered "949.9" and full credit was given to those who were able to figure out that the actual number of people is 949,000. The level of difficulty of the partial credit answer was rated at 485, and 631 for the full credit. Only 20 percent of Albanian students achieved the level of difficulty of the partial credit question (on the reading average). Less than 1 percent of Albanian students reached the level of the full credit question. In contrast, in OECD countries, 65 percent of students solved questions at the level of difficulty of the partial credit answer, while 28 percent of students solved the questions at the level of difficulty of the full credit answer.

**Figure 12** PISA 2012 performance on different reading subscales compared to each group's average reading performance



Source: PISA 2009. Note: Albania's average score is 385 and OECD's average score is 493.

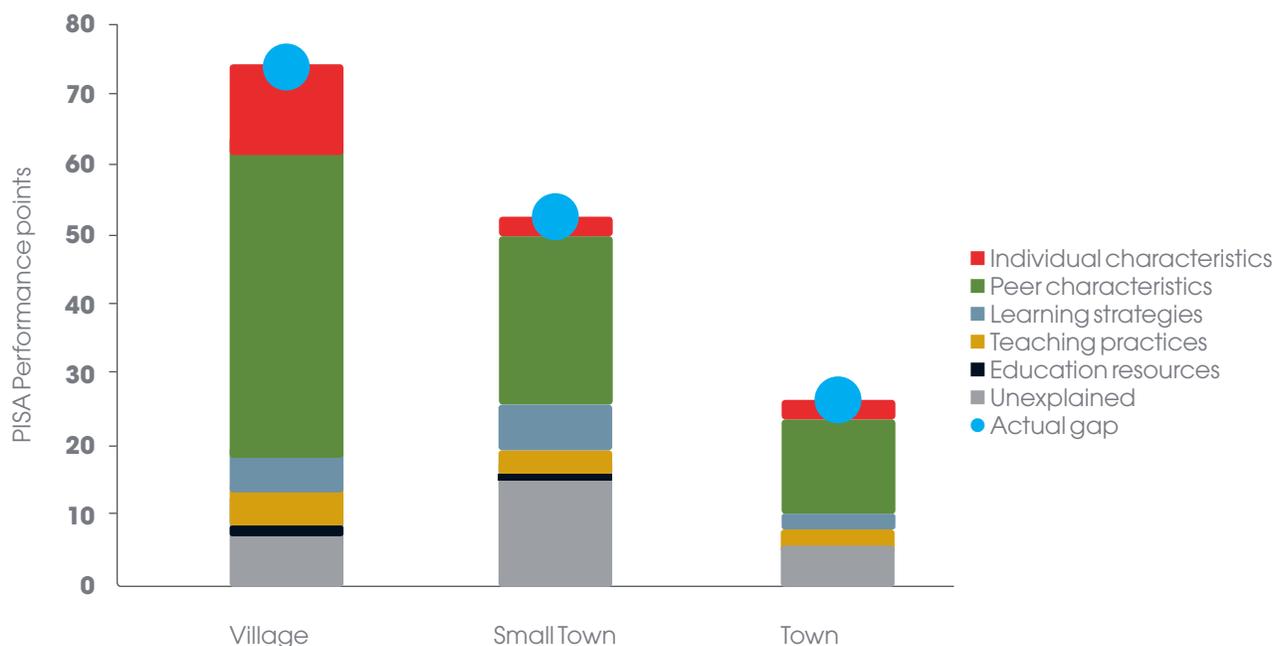
the PISA reading survey; for example, personal, public, educational, and occupational situations are represented.

**Albanian students have a much better understanding of continuous text than of non-continuous text, and there is a need to improve their reflection and evaluation skills.** Comparing the reading subscale results with the average reading performance,<sup>25</sup> Albania shows much more variation across subscales than that seen in OECD countries, which means there is large room for improvement in some subscales. In particular, students perform better with more traditional texts than with texts contained in sample lists, graphs, or diagrams (more than 25 points of difference, equivalent to a half year of schooling). Moreover, PISA reveals Albanian students' weaknesses in relating their own experiences to the text, reflecting a disconnect between what students learn and their ability to apply this knowledge in real-life situations.

## Teaching practices and learning strategies in reading

### Teaching practices and learning strategies have a major impact on performance.<sup>26</sup>

To understand the extent to which poor learning techniques in the classroom hamper student development, this study creates two indices that account for: (i) the control, elaboration, memorization, and understanding strategies of students in class; and (ii) how teachers (as reported by students) engage students, ensure an adequate disciplinary climate, manage assignments, and help students relate their own knowledge.<sup>27</sup> Analysis of PISA scores worldwide finds that higher values of these two indices are needed to ensure learning for all.<sup>28</sup> Furthermore, the proportion of qualified teachers (those with tertiary education) in a school positively affects reading scores: for every additional 10 percentage point increase in the share of a school's qualified teachers, there is an increase of 3 points in the PISA reading score. The analysis

**Figure 13** Decomposition of the reading performance gap between villages/towns and cities (PISA 2009)

Source: Authors' calculations based on PISA 2009 data.

Note: Twofold Oaxaca decompositions were conducted comparing each geographical location's gap with cities, and including the indices of learning strategies and teaching practices. "Unexplained" factors include the aggregation of gaps explained by returns to individual and school characteristics and the residual part of the threefold Oaxaca decomposition.<sup>29</sup>

accounted for: (i) learning strategies employed by students; (ii) teaching practices used in schools; and (iii) the quality of educational resources; while (iv) controlling for several individual and peer characteristics as previously described.

**Spatial disparities are largely explained by individual and peer characteristics, although effective teacher policies could narrow the gap.** Analysis of the determinants of school quality shows the critical role of teaching practices and learning strategies for both Albania and other PISA-participating countries. Decomposing differences in reading performance between students in cities (with 100,000-1,000,000 people) and smaller geographical locations shows that differences are mainly driven by individual and peer socioeconomic characteristics. However, for less populated locations like villages (less than 3,000 people), small towns (3,000-15,000 people), and towns (15,000-100,000 people), an improvement in effective learning strategies and teaching practices could help reduce

the gap by around 10 points (Figure 13). In the results shown in Figure 13, "unexplained" refers to the combination of systemic change factors and the residual effect not captured by PISA data, including governance and management practices, social and cultural norms, and teacher and principal effectiveness.

**Learning strategies and teaching practices explain an important part of the reading performance gap between girls and boys.** The previous section showed that in most countries, girls outperform boys in reading, usually by a difference of at least one year of schooling. A decomposition of the determinants of the reading gender gap features learning strategies as a critical reason why boys lag behind girls (primary education entrance age and teaching practices are also important). The largest part of the gap (80 percent), however, is explained by differences in returns to individual and school characteristics, which suggests that boys and girls use different learning patterns for reading.<sup>30</sup>

# 3. Recommendations



**An effective assessment system tends to comprise three main types of assessment activities, each of which serves a different purpose and addresses different information needs.** These three main types are: classroom assessment, examinations, and large-scale, system-level assessments. In the latter category, the assessments are further split into national and international assessments. PISA is a large-scale, international assessment. In Albania, it offers the only source of information on student learning outcomes that is comparable over time.

**PISA defines itself as a competency-based assessment that is curriculum-free.** Competencies are understood as what students know and can do with their knowledge, and are selected from a pool of tasks a person should be able to master to be successful in life. Although PISA results can be used to inform curricular reforms, assessment programs, and professional development for teachers, they should not be the sole source of information for policy makers. An integrated assessment system comprising the full range of assessments described above should reflect the content of the curriculum, be objective and fair, and provide results in a way that supports the system to identify areas where further research or remedial action are needed. While PISA results present a good starting point to discuss education reform, there are limits to the conclusions that can be drawn from them.

**With this caveat in the mind, the following policy recommendations emerge from this study:**

- 1 **Reach national consensus to improve overall education quality.** Student achievement as measured by PISA improved from 2000-2012, especially in reading. However, overall performance remains low and the majority of students are below the basic proficiency levels in both reading and math. Despite several reform efforts over the past decade, resource allocation to education remains inadequate, with little hope for increased public expenditures in the context of macro fiscal constraints. In the short term, the government is presented with the challenge of continuing to improve education quality while seeking efficiency gains in the sector. In the medium to long term, it is clear that comprehensive and concerted reform is required to accelerate progress in the sector, starting with a national consensus to prioritize the enhancement of learning outcomes and ensuring skills development across the board. Without recognition that education reform presents a unique opportunity to produce a cadre of workers with competent and flexible skills, catalytic economic and social development will remain out of reach in Albania.

- 2 Steer educational resources and qualified teachers to benefit the most disadvantaged students.** Some groups systemically lag behind. The most disconcerting trend is the widening gap between students from the highest and lowest quintiles of the OECD ESCS Index from 2000 to 2009, resulting in a gap of performance equivalent to about two years of schooling in both math and reading. Furthermore, the gap between boys and girls in reading is more than 60 points, while the urban-rural gap is more than 50 points, equivalent to nearly one-and-a-half years of schooling. Although the entire education sector is resource constrained, more funding should be targeted to benefit boys, students from disadvantaged backgrounds, and those who live in rural areas. Rural schools may need extra school resources to make up for the gap in students' socioeconomic backgrounds, while incentives should be aligned to ensure that the best teachers are matched with the most difficult students. Related to this, the existence of overlapping catchment areas for schools and the growing number of small schools present opportunities to consider school rezoning options in a way that makes schools less stratified and promotes more equitable outcomes.
- 3 Strengthen the effectiveness of teacher practices as this is a key driver of quality.** The analysis highlights the importance of effective teaching practices, student learning strategies (partially a product of teaching practices), and the positive impact of having a large proportion of qualified teachers in schools. Peer mentoring programs paired with classroom observations, teachers' professional development focusing on improved classroom effectiveness, and feedback

systems for teachers could make the difference in strengthening classroom management techniques and promoting relevant pedagogic techniques.

- 4 Expand coverage and monitor the quality of preschool education.** Preschool education has the potential to mitigate inequities early in life and level the playing field for disadvantaged students. PISA data show that an early start in primary school is strongly correlated with higher reading scores in Albania even after controlling for several factors. Yet an analysis of variance in access to preschool or starting primary education at age six presents disparities along socioeconomic quintiles, as well as between boys and girls. In the context of the government considering the introduction of grade 0 for inclusion in compulsory education, special efforts will be required to ensure that boys and low socioeconomic status students are targeted for enrollment. Furthermore, the quality of early education should be enhanced and monitored to ensure that the "preschool effect" is attained in Albania.
- 5 Improve the robustness, reliability, and accessibility of data.** Albania is the only country whose PISA 2012 household data are not reliable, according to the OECD. As Albania prepares to participate in PISA 2015, including piloting instruments prior to spring 2015, mechanisms to ensure the quality of data collection are critical for evidence-based policy making to take place. International surveys such as PISA may be costly but they have the potential to help policy makers identify weaknesses in the education sector and thus should be exploited to their fullest.

# References

Engle, P., L. Fernald, H. Alderman, J. Behrman, C. O’Gara, A. Yousafzai, M. Cabral de Mello, M. Hidrobo, N. Ulkuer, I. Ertem, S. Iltus, and Global Child Development Steering Group. 2011. “Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries.” *The Lancet*- 8 October Vol. 378, Issue 9799: 1339-1353 ). DOI: 10.1016/S0140-6736(11)60889-1.

Ferreira, H.G., and J. Gignoux. 2011. “The Measurement of Educational Inequality: Achievement and Opportunity.” IZA Discussion Paper No. 6161.

Hanushek, E. 2010. “The High Cost of Low Educational Performance. The long-run economic impact of improving PISA outcomes.” OECD Publications.

Hanushek, E., and L. Woessmann. 2006. “Does Educational Tracking Affect Performance and Inequality? Differences-in-differences evidence across countries.” *The Economic Journal* Vol. 116, Issue 510: C63-C76.

Hanushek, E., and L. Woessmann. 2007. “The Role of Education Quality in Economic Growth.” World Bank Policy Research Working Paper 4122. World Bank, Washington, DC.

Hanushek, E., and L. Woessmann. 2010. “The Economics of International Differences in Educational Achievement”. NBER Working Paper 15949.

Hanushek, E., and L. Woessmann. 2012. “Do Better Schools lead to more growth? Cognitive skills, economic outcomes, and causation.” *Journal of Economic Growth* Vol. 17: 267-321.

Heckman, J. 2008. “Schools, skills, and synapses.” *Economic Inquiry* 46(3): 289-324.

Heckman, J., and P. LaFontaine. 2010. "The American High School Graduation Rate: Trends and Levels." *Review of Economics and Statistics* 92(2): 244–262.

OECD. 2012a. "PISA 2009 Technical Report." Paris: OECD. Retrieved April 10, 2014 from <http://www.oecd.org/pisa/pisaproducts/50036771.pdf>

OECD. 2012b. "PISA 2009 Results: Learning to Learn – Student Engagement, Strategies and Practices (Volume 3)." Paris: OECD.

OECD. 2014. "PISA 2012 Results: What Students Know and Can Do." Paris: OECD. Retrieved April 10, 2014 from <http://www.oecd.org/pisa/keyfindings/pisa-2012-results-volume-I.pdf>

OECD/United Nations. 2013. "World Migration in Figures." Retrieved May 18, 2014 from <http://www.oecd.org/els/mig/World-Migration-in-Figures.pdf>.

Sala-i-Martin, X., G. Doppelhofer, and R.I. Miller. 2004. "Determinants of long-term growth: A Bayesian averaging of classical estimates (BACE) approach." *American Economic Review* 94 (4), 813-835.

World Bank. 2013. "Promoting Excellence in Turkey's Schools." World Bank, Washington, DC.

World Bank. Forthcoming. "Albania Public Finance Review, Part II: Improving the Efficiency and Quality of Public Spending." World Bank, Washington, DC.

# Annex:

## Empirical Strategy and Results of RIF Regressions

The analytical approach used in Section 2 of this report is based on the Firpo, Fortin, and Lemieux (2009) methodology. Typically, the literature on decomposition of student scores in PISA through groups (Amermueller 2004) and years (Barrera et al. 2011) has focused on the mean differences, with little attention to what happens at the tails of the distribution. The Firpo, Fortin, and Lemieux (FFL) method allows one to decompose gaps in student performance not only for the mean but also for other statistics of the distribution. Traditionally, the problem with quantile regressions has been that the law of iterated expectations does not apply, thus making it impossible to interpret the unconditional marginal effect of each independent variable on a student's performance. However, recent econometric techniques, such as the one proposed by FFL, have solved this methodological difficulty. The FFL technique is based on the construction of re-centered influence functions (RIF) of a quantile of interest as a dependent variable in a regression:

$$RIF(I; q_{\tau}) = q_{\tau} + \frac{\tau - D(I \leq q_{\tau})}{f_I(q_{\tau})}$$

where  $D$  is an indicator function and  $f_I$  is the density of the marginal distribution of scores. A crucial characteristic of this technique is that it provides a simple way of interpreting the marginal impact of an additional unit of a certain factor on students' PISA scores. Once the unconditional quantile regression has been computed for different quantiles of the distribution, the results can be decomposed following the Oaxaca-Blinder approach.

Table A.1. Access to school resources by socioeconomic group

	Bottom ESCS 20%	Top ESCS 20%	Total
Socioeconomic status (Index)	-2.38	0.56	-0.95
Teaching practices (Index)	-0.61	-0.39	-0.53
Learning strategies (Index)	-0.26	0.16	-0.08
Quality of educational resources (Index)	-1.11	-0.47	-0.74
Attended one year of preschool (%)	21.6	20.0	22.7
Attended more than one year of preschool (%)	41.6	64.3	52.7
Shortage of qualified teachers (%)	27.8	15.5	19.1
Shortage of computers (%)	58.4	37.7	44.6
Shortage of internet (%)	83.0	47.6	63.3
Shortage of instructional materials (%)	19.0	16.7	17.6
Reading PISA score	346	439	385
Math PISA score	343	421	377
Science PISA score	357	436	391

Source: PISA 2009.

Note: Index of teaching practices and learning strategies are normalized at the OECD level. Index of socioeconomic has a full-sample average of -0.55 and a standard deviation of 1.21. The index of quality of educational resources has a full-sample average of -0.28 and a standard deviation of 1.21.

Table A.2. Access to school resources by urban/rural residence

	Urban	Rural	Total
Socioeconomic status (Index)	-0.59	-1.40	-0.95
Teaching practices (Index)	-0.45	-0.63	-0.53
Learning strategies (Index)	0.00	-0.19	-0.08
Quality of educational resources (Index)	-0.45	-1.11	-0.74
Attended one year of preschool (%)	23.1	22.2	22.7
Attended more than one year of preschool (%)	56.1	48.4	52.7
Shortage of qualified teachers (%)	14.5	24.7	19.1
Shortage of computers (%)	35.8	55.2	44.6
Shortage of internet (%)	41.8	89.2	63.3
Shortage of instructional materials (%)	21.2	13.3	17.6
Reading score	409	355	385
Math score	397	354	377
Science score	408	369	391

Source: PISA 2009.

Note: Index of teaching practices and learning strategies are normalized at the OECD level. Index of socioeconomic has a full-sample average of -0.55 and a standard deviation of 1.21. The index of quality of educational resources has a full-sample average of -0.28 and a standard deviation of 1.21.

Table A.3. Indices of learning strategies and teaching practices

<b>Learning Strategies</b>	Control	How students set clear goals for themselves and monitor their own progress in reaching them
	Memorization	Extent to which students try to memorize texts
	Elaboration	How students relate acquired knowledge to other contexts (own life, outside school, and prior knowledge)
	Metacognition: understanding and remembering Metacognition: summarizing	Compares students' strategies for understanding and remembering with what experts rate as the most appropriate strategies Compares students' strategies for summarizing with what experts rate as the most appropriate strategies
<b>Teaching Practices</b>	Discipline, order, and time management	The disciplinary climate in the classroom (noise and time taken for students to quiet down)
	Discussion and debate	Extent to which teachers engage students in discussion
	Relating knowledge	Whether teachers help students relate knowledge to different contexts (prior knowledge and personal experiences)
	Clarifying expectations	Whether teachers outline how student-teacher interaction will be from the beginning
	Managing assignments	Whether teachers mark assignments, check if students understood the lesson, and motivate students
<b>Quality of Educational Resources</b>	Shortage or inadequacy of the following factors (as reported by school principals)	Science laboratory equipment, instructional materials (including textbooks), computers for instruction, internet connectivity, computer software for instruction, library materials, and audio-visual resources

Source: See OECD (2012b) for more details on the indices.

Note: Indices were constructed by authors by using the coefficients found in a linear regression of reading scores which included the pooled data for all countries participating in PISA 2009.

Table A 4. OLS regressions of PISA 2009 reading scores

Variables	Albania	Full sample
Female	42.79*** (3.433)	19.36*** (0.62)
Age	-14.31** (6.266)	-4.492*** (0.972)
Grade	0.705 (6.203)	22.05*** (0.831)
Entrance	-8.545** (3.849)	0.611 (0.569)
ESCS	13.06*** (1.577)	8.801*** (0.324)
ESCSS	28.67*** (6.32)	31.06*** (1.041)
Index Teacher Practices	10.39*** (1.9)	11.71*** (0.306)
Index Learning Strategies	28.31*** (1.894)	29.28*** (0.379)
Student-teacher Ratio	0.858 (0.535)	0.0229 (0.0584)
Index of Quality of Education Resources	6.91 (4.242)	0.735 (0.619)
Attended more than one year of pre-primary education	6.071 (3.795)	4.623*** (0.726)
Proportion of Teachers with Higher Education	27.92** (12.8)	6.013* (3.29)
Constant	676.1*** (94.08)	548.2*** (14.91)
Country Dummies	No	Yes
Observations	2,812	355,121
R-squared	0.429	0.582

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Note: Clustered errors at the school level.

Table A.5. Oaxaca-Blinder decomposition of performance gap relative to cities, PISA 2009

Variables	Town	Small Town	Village
City	438.8*** (7.672)	438.8*** (7.956)	438.8*** (7.882)
Location of Interest	364.0*** (7.810)	386.8*** (6.245)	411.9*** (6.999)
Difference	74.72*** (10.95)	51.98*** (10.11)	26.84** (10.54)
Systemic Efficiency	6.036 (11.16)	14.62 (10.42)	6.400 (6.857)
Explained	68.68*** (12.63)	37.36*** (11.62)	20.44** (9.366)
Girl	-2.114 (1.331)	-3.288** (1.380)	-1.601 (1.575)
Entrance	-0.540 (0.839)	-1.102 (0.977)	-1.642 (1.065)
Age	1.252 (0.904)	1.513 (1.006)	1.248 (0.896)
Grade	-0.0250 (0.321)	-2.947 (2.290)	-0.880 (2.161)
ESCS	15.31*** (2.944)	8.501*** (1.950)	4.665*** (1.584)
ESCS (School)	42.39*** (10.28)	25.48*** (7.471)	15.70*** (5.335)
Teaching Practice (Index)	2.112** (0.902)	1.964*** (0.751)	1.719** (0.781)
Learning Strategy (Index)	7.355*** (2.666)	5.914** (2.623)	1.949 (2.394)
Quality of School Resources (Index)	4.270 (4.874)	1.938 (3.083)	0.0626 (1.607)
Quality of School Resources <sup>2</sup> (Index)	-1.329 (3.386)	-0.614 (1.098)	-0.778 (2.010)
Constant	-146.3 (254.5)	90.58 (234.2)	402.2* (224.0)
Observations	1,655	1,597	1,878

Note: Robust standard errors in parentheses. Twofold Oaxaca decomposition. Systemic efficiency accounts for the aggregation of the returns to endowments and unexplained part of the Oaxaca decomposition. Villages are settlements with fewer than 3,000 people; small towns have between 3,000 and 15,000 people; towns have between 15,000 and 100,000 people; and cities have between 100,000 and 1,000,000 people.

Table A.6. Oaxaca-Blinder decomposition of gender reading gap, PISA 2009

Variables	Overall	Endowments	Coefficients
Girls	431.1*** (4.549)		
Boys	379.0*** (5.758)		
Difference	52.05*** (4.586)		
Endowments	10.35*** (3.329)		
Coefficients	42.57*** (3.519)		
Unexplained	-0.859 (1.816)		
Entrance		1.545* (0.801)	50.28 (46.62)
Age		0.0209 (0.0896)	-379.0* (228.5)
Grade		-0.373 (0.777)	6.549* (3.638)
ESCS		-0.599 (0.582)	-5.106 (3.133)
ESCS (School)		-0.191 (1.250)	6.491 (7.223)
Teaching Practices		1.462** (0.674)	1.958 (1.931)
Learning Strategies		8.551*** (1.528)	0.969 (0.664)
Student-Teacher Ratio		0.0311 (0.213)	23.63** (11.27)
Quality of Educational Resources (Index)		-0.844 (0.830)	2.565 (3.650)
Attended at least two years of pre-primary school		0.746 (0.601)	-0.852 (2.755)
Constant			335.0 (216.7)
Observations	2,903	2,903	2,903

Note: Robust standard errors in parentheses. Threefold Oaxaca decomposition.

# Endnotes

- 1 Programme for International Student Assessment.
- 2 See Sala-i-Martin, Doppelhofer, and Miller (2004).
- 3 See Hanushek and Woessmann (2007) and Hanushek (2010). Using these tests as measures of cognitive skills of the population, they show that countries that had better quality of education in the 1960s experienced faster economic growth during the years 1960-2000, controlling for other factors.
- 4 OECD (2012a).
- 5 See Hanushek and Woessmann (2010) for a detailed review of analysis of international tests like PISA and TIMSS.
- 6 Data on enrollment rates come from UNESCO Institute for Statistics and were compiled by EdStats.
- 7 One expects children out of school to be part of the most disadvantaged segments of society, which tend to have worse performance.
- 8 PISA defines functional literacy in reading as the ability of students to use written information in real-life situations, including “understanding, using, reflecting on and engaging with written texts, in order to achieve one’s goals, to develop one’s knowledge and potential, and to participate in society.” For mathematics literacy, it is the extent to which students can reproduce mathematical content knowledge, but also how well they can extrapolate from what they know and apply their knowledge of mathematics in both new and unfamiliar situations. In both subjects, those who are below level 2 can only answer questions involving familiar contexts where all relevant information is available and the questions are very clearly defined. Such students can only solve problems that are almost always obvious and can be immediately extrapolated from the given information.
- 9 An Albanian student in the 80th percentile in reading scores 485 points, which is the same score as that of a student in the 45th percentile in the distribution of OECD students.
- 10 This pattern is similar when looking at data from PISA 2009. An 80th percentile student in reading in Albania would be a 40th percentile student in the OECD. In math, she would be in the 34th percentile.
- 11 Ferreira and Gignoux (2011) propose a measure of educational opportunity using the share of variance in test scores that is explained by individual predetermined circumstances. If a significant share of the results is explained by these characteristics, then the equality of opportunities is low.
- 12 See Table A.1 in the Annex.
- 13 The World Bank’s mission has recently been articulated into two main goals: boosting the end of extreme poverty and promoting shared prosperity. The latter is interpreted in this report to include the bottom 40 percent to also capture the people who are considered

- moderately poor in middle-income countries such as Albania.
- 14 See the Annex for the full model.
- 15 See Table A.2 in the Annex.
- 16 After controlling for all of the previous variables, the type of school (public or private) does not significantly affect learning outcomes.
- 17 An emigration rate of 29 percent means that for every 100 people born in Albania, 29 of them live in OECD countries.
- 18 See OECD/United Nations (2013).
- 19 Individual characteristics and peer effects are usually strongly correlated and it is not always straightforward to disentangle the two.
- 20 See World Bank (2013).
- 21 See Hanushek and Woessmann (2006).
- 22 See World Bank (forthcoming). Official statistics and analysis of the LSMS 2012 offer conflicting enrollment rate figures: the former is 73 percent and the latter is 33 percent.
- 23 The last two processes are summarized into a single skill in PISA student data.
- 24 “Average math performance” refers to the average score across all math subscale scores.
- 25 “Average reading performance” refers to the average score across all reading subscale scores.
- 26 Responses on teaching practices and routines and student learning strategies for reading are reported by the students in the PISA Student Questionnaire.
- 27 The index is constructed from the coefficients of a linear regression of reading scores against the indices in PISA 2009 of practices and strategies separately.
- 28 See Annex Table A.3 for a description of the variables and Table A.4 for a summary of regression results.
- 29 See Annex Table A.5.
- 30 See Annex Table A.6.







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