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ALBANIA

The Cost of Underinvestment in Education:
And ways to reduce it

INCLUDING ALL CHILDREN IN QUALITY LEARNING

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UNICEF

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Foreword

The case for investing in education is unquestionable. Education is a fundamental human right. It is critical for long-term economic growth and crucial for the achievement of all of the United Nations Sustainable Development Goals.

The value of education is increasing because it is education that will determine whether the defining trends of this century – technological, economic, and demographic – will create opportunity or reduce inequality, and because it is the common critical factor for successfully addressing the global challenges humanity is facing.

Countries that invest and reform in education as a means for ensuring to achieve the United Nations Sustainable Development Goals will secure huge benefits that far outweigh the costs. They will gain the economic advantages that come with an educated workforce with the skills necessary to compete in the 21st century economy. The overall economic benefits will translate into far-reaching gains in income and living standards at the individual level as well.

Albania is no exception to this trend. While Albania has made significant strides towards advancing the education agenda, there are still gaps to be bridged with regard to sustaining universal rates in primary education, improving quality of education, increase access and quality of preschool education and reduce disparities with a focus on ethnic minority children and children with disability.

In line with the National strategy of Pre-University Education, Albania needs to increase its investments in education to 5 % of the GD. This study has revealed that by not doing so, the country loses 35million USD yearly. Increased investments in education is not the magic bullet that will resolve all issues in education. This study indicates as well that investments have to be smart and efficient. They have to focus on the lower levels of education and specifically in preschool in order to break the cycle of exclusion and to bring the highest returns to the economy, they have to target inequalities by providing incentives which address both teachers and children, decentralize the education system by providing more decision-making and authority to the schools and use rigorous evaluation and research, to mention some of the recommendations.

As a conclusion, we hope that this study will be triggering a national debate on the need for more investments in education and that it extensively used by policymakers at central and local level and Albanian Parliament to ultimately work for increased investments in education. The study, we hope will also be used at mobilization and deployment of donor and private funds for education as education's not just good for children, it is good for the prosperity of Albania as a nation. Investing in education isn't just the right thing to do, it's also smart economics.

UNICEF in Albania

Foreword

Albanian Government is placing a high priority on strengthening the education system, as education is considered a key driver to achieve social equality and promoting the rights of all individuals and society. Investments in education are key to reduce poverty among generations and promote prosperity both of individual and of the country, in general.

Ministry of Education and Sports has undertaken several reforms in education intended to improve student's achievement and enable them to be competitive in the future global markets. As the initiator of such significant reforms, the Ministry of Education and Sports (MES) is the main stakeholder promoting and advocating for more considerable budget allocation in education, as a way to address many challenges of inclusive and quality education for all Albanian children. MES, as a policy maker is therefore very keen to have serious studies, such as the one presented herein, advocating for higher investment in education, based on real evidence.

Like in many other countries, the aspect of investment in education in Albania remains a complex issue. Increasing education budget, at a time of many competing priorities, remains a challenge for Albanian Government.

It is crucial therefore to build the case for all policymakers and the public so that they are confident and support more investments in education, which are beneficial to the whole society. Although such investments do not yield their results today, they bring enormous benefits in the long run, ensuring sustainable results to the next generations.

Of paramount importance for MES are the measures suggested by the study, required for an education system that is more efficient, with cost effective student-teacher ratios, with investments targeting pre-and-primary school as a means to having high returns on investment as well as a better financing system supporting inclusion.

All of these are crucial policies. Since education is an investment in the future of our country, I am confident that the valuable information given in this study will help the policy makers to make just and fair choices. We must do the right thing, now.

Nora Malaj

Vice-Minister

Ministry of Education and Sports

Executive summary

It is widely accepted today that education is a catalyst for economic and social development. In this context, there is concern in Albania that its educational system falls short in contributing to the country's socioeconomic development:

- About 15,000 children are out of school, many of them in child labor.

- Among adults, there are about 64,000 illiterates.

- Roma children lag behind in scholastic achievement.

- One half of schools lack basic facilities.

- One of four teachers is not qualified.

- Secondary school children PISA score is among the lowest compared to other countries, such as the OECD ones.

- Public spending for education is 2.9% of GDP, vs. a 4.5% average in EU countries.

A review of evidence from similar studies in other countries has shown that the loss associated with a failing educational system is enormous.

This study

The purpose of this study is twofold. First, to provide evidence for the potential benefits to the country related to increased public funding for education, and second, to define educational policies that would contribute the most to the country's socioeconomic development.

Investing in education yields many benefits to the individual and the country as a whole. Data from the 2012 household survey were used to establish a link between education and economic outcomes. Comparing the costs to the benefits, education gave rates of return on the investment in excess of that in bank deposits or a 3% typical social discount rate used for evaluating projects.

Private and social rates of return by level of education (%)

Educational level	Private	Social
Lower secondary	16.5	9.2
Upper secondary	5.6	5.7
Tertiary	8.7	8.1
Overall	10.3	7.7

Because education invariably raises earnings, part of what the state spends on education is returned back through increased tax revenue on the higher earnings.

Assuming the Albanian government followed a policy of bringing to school and graduating 4,000 upper secondary school-age children, i.e., one half of those now out of school, the gain would be on the order of US$ 3.4 million or 0.03% of the country's US$ 11.5 billion GDP.

Fiscal benefit as a result of enrolling one half of out of school upper secondary school-age children

Extra upper secondary students	4000
Net PV of benefits per graduate (US$)	842
Total benefit (US$ million)	3.4
Net benefit as % of GDP	0.03

Using macro growth accounting, a link was established between public spending for education and the rate of growth of the economy. Based on the return to investment in education stemming from the 2012 household survey and international evidence on the wider social effects of education, a 15% social rate of return on the investment was adopted in the simulations.

Two steady states were compared. A base *status quo* scenario of education spending at the present level of 3% of GDP, and a future scenario of increased spending to 5% of GDP, or 345 million and 575 million, respectively.

It was found that under the present scenario, education contributes 0.5 percentage points to the rate of growth of the economy. Under the future conditions, the contribution of education to the economic growth rate would be 0.8 percentage points, i.e., instead of the country growing at 2% per year, as it has done in recent years, it would grow at 2.3%. The 0.3 percentage point difference on a US$ 11.5 billion GDP corresponds to an annual loss of US$ 35 million. Assuming a 3% discount rate, the present value of such a loss over a 50-year period is US$900 million. This finding is largely consistent with previous estimates on a world-wide scale.

Loss estimate

Time period	Public education spending share of GDP (%)	Growth contribution of education (in percentage points)	Loss in growth percentage points (Future – Base)	Annual loss to GDP (US$ million)	Present value of loss at 3% discount rate (US$ million)
Base	3%	0.5			
Future	5%	0.8	0.3	35 million	900 million

Regarding education quality, some progress has been made in the PISA achievement test of secondary school children, although Albania's overall performance in PISA continues to be among the lowest when compared with other countries such as OECD ones.

2015 PISA mean score in selected countries
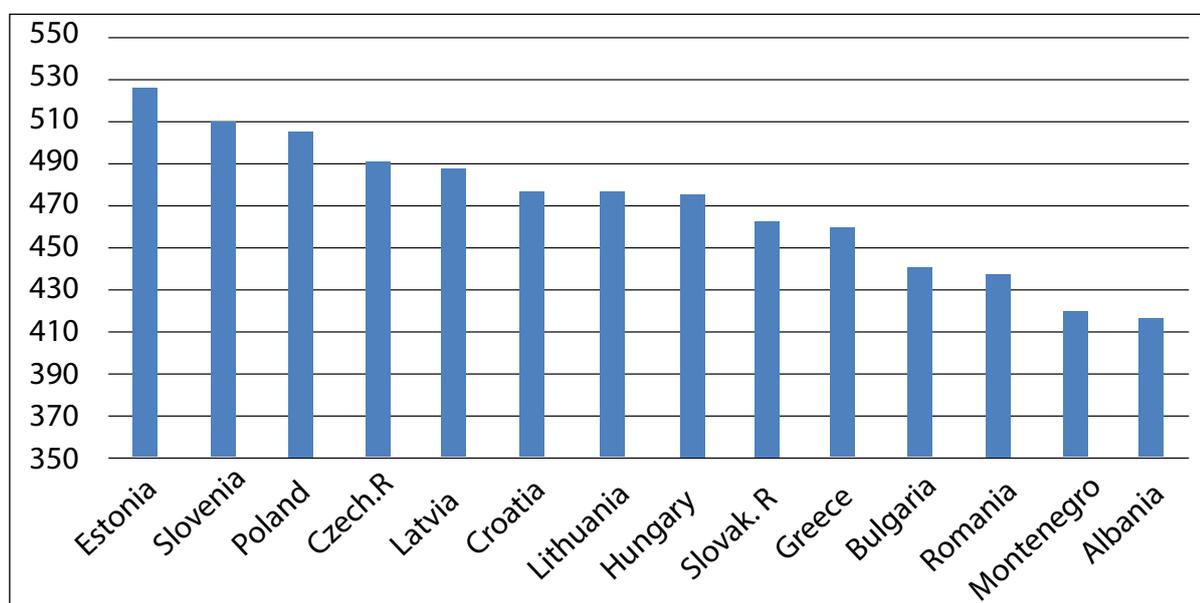
Equity.

Beyond the above efficiency-related estimates, there could be additional losses due to a series of disparities. For example, the earnings difference between men and women diminishes dramatically with ascending levels of education.

When education-related disparities are reduced by investing more in education, beyond redressing equity on its own right, there could be a further boost in efficiency.

Annual earnings by gender (US$)

Educational level	Men	Women	Female disadvantage index
Lower secondary	3121	2006	-55.6
Upper secondary	3659	2649	-38.1
Tertiary	4770	4155	-14.8
Overall	3662	3130	-17.0

Although women earn significantly less than men in absolute terms, the returns to investment in women's education is 11.7% vs. 7.3% for men. This apparently contradictory finding, explained by the fact that women have lower foregone

earnings than men, has been observed on a world-wide scale.

Educational achievement in Albania is socially stratified well above other OECD countries. Stratification is bad because it denies opportunities and upward economic and social mobility to talented children.

Social stratification

Country	Social stratification index
Albania	0.55
Latvia	0.47
Montenegro	0.40
Estonia	0.45
Croatia	0.46
Serbia	0.46

Regarding regional disparities, the average level of educational attainment between urban and rural regions differs by two years of schooling.

Mean years of schooling by region, 2012

Region	Mean years of schooling
Urban	10.5
Rural	8.6

Nearly one third of Roma women are illiterate vs. 5% for non-Roma women. Roma women have spent an average of only 5 years in school, as compared with 10 years for non-Roma women.

Roma children in the 5th grade score 29 points out of 100 in the combined national assessment of language, mathematics, sciences and citizenship assessment test, vs. an average of 45 for the country as a whole.

Ethnic disparities

Indicator	Roma	Non-Roma
Literacy rate (%)	65	95
Upper secondary enrollment (%)	13.5	60
Years of schooling	4.4	9.6

Educational policies

Albania has much to gain by increasing its spending on education. But an equally important question is, spending for what? And how to ensure the increased spending would be used efficiently rather than wasted? Based on the findings in this study and international evidence, a series of educational policies have been considered.

Set priorities

Increasing the share of GDP spent on education is a higher level political decision because it means cutting allocations to other sectors of the economy or mobilizing local resources. In all countries, both routes have been difficult.

Once the education budget is decided, in theory at least, it is up to the Ministry of Education to decide how to use the funds. Regretfully, in most countries of the world, budgetary allocations to education are typically determined by inertia, e.g., same as last year, perhaps adjusted for inflation. Or they are driven by rigid formulas, such as the number of students enrolled at a particular level of education. The alternative to inertia is setting priorities based on efficiency and equity criteria, something that requires a very strong political will.

Preschool

Extensive research based on longitudinal data that follow young children who have been subjected to experimental programs to adult life has shown that investing in early years yields the highest social returns exceeding 20%, and a 7:1 benefit-cost ratio.

Although preschool is not compulsory in Albania, based on international evidence, increasing preschool coverage should be the first priority in allocating new resources to education. Enrolling 10,000 extra children in preschool, increasing the enrollment ratio from about 80% to 90%, would cost $2.5 million per year. It is expected that such an investment would pay off several times its cost in the future.

The government should also consider giving financial assistance to families in order to enroll their children in preschool, since those children not attending preschool most probably come from the poorest families (Filmer and Schady, 2008).

Primary education

With primary education becoming virtually universal, the focus should be on the 7,000 school-age children who are still out of school. Covering them in the system would cost $US 4million, a good investment according to international evidence, not only in economic terms, but also as a basic human right.

The government could target Roma children, especially girls and those with disabilities, to enroll in primary education by providing an incentive to families. Presently, 35% of children with disability aged 6-15 years old are out of the education system (Save the Children, 2015b).

Secondary education

The goal should be 100% lower secondary education completion. Bringing 2,000 upper secondary-school-age children to completion would cost $1.2m., another good investment. Again, those who do not complete lower secondary education must be coming from the poorest families. They could be given a subsidy to offset the child's earnings, so that children do not have to be in child labor.

The quality of secondary education could be improved by splitting the financing from the provision of education in the form of public-private partnerships. This means that while the state can finance education, its provision can take place in

private schools often at a lower cost and higher achievement relative to public schools.

Tertiary education

University graduates enjoy high private returns over their lifetime. Any expansion could be linked to the capacity of the student to pay fees. Any fees should be selectively combined with subsidies for the poor and student loans for all. This combination of policies introduces strong incentives for a more efficient and equitable educational system. It also releases resources to be spent on the lower levels of education.

Direct vs. indirect education financing

Public funding

Student

School
(public or private)
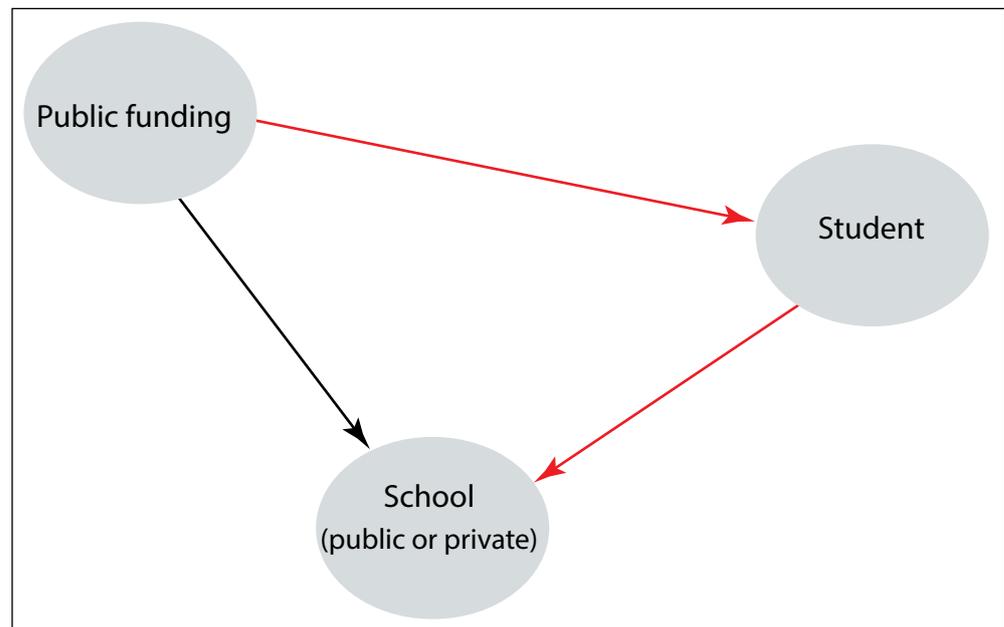
Institutional

It could be considered whether to establish the "3-As" system of Autonomy, Assessment and Accountability. There is extensive international evidence, based on randomized control trials, that moving educational decisions from the center to the school improves learning.

But assessment and evaluation require data, so a Management Information System for regular data collection should be established. The data could range from basic education indicators on which existing statistics are in conflict – such as net enrollment ratios by level of education and unit costs – to more sophisticated ones such as the following up of graduates in the labor market.

A recap

Educational systems in all countries, rich or poor, are plagued by a myriad of problems no country or donor can fix entirely, and Albania is no exception. But based on significant rigorous education research in recent years, there is broad consensus on a number of recommendations that, if adopted, would improve any educational system. Whether a given policy is adopted or not is determined by the political economy of decision making in a particular country. The recommendations include:

- For efficiency, establish priorities based on cost-benefit and cost-effectiveness analysis.

- For equity, consider the implications of any contemplated educational policy and its links to efficiency. Gender inequality affects economic growth by lowering human capital formation. Target specific groups such as girls, children from low-income families and ethnic minorities.

- Give priority to the lower levels of education, especially preschool, at it is at the very early ages that brain synapses are formed and any handicap would be perpetuated for life.

- Policies that address better access to school in rural areas, and also for gender equity, need to be reinvigorated. Regional disparity is one of the reasons for individual inequality in Albania, negatively affecting people who live in marginalized areas.

- Give priority to general rather than vocational curricula and training. The reason is that a good foundation of general education facilitates later specialization and training. In addition, employers today want trainable employees with soft communication skills who can learn on the job, rather than narrow specialists.

- Introduce incentives in the educational system. Merit pay for teachers is one option.

- Measure educational quality by output, not by input. Several studies have shown that traditional input measures of educational quality, such as expenditure per student, do not relate to student achievement.

- Correct the two most common sources of market failure in education – lack of information and credit constraints.

- Decentralize the educational system by giving education-related decision authority to schools accompanied by evaluation and accountability. One without the other two in the golden trio will not do.

- Use rigorous evaluations. So-called self or qualitative evaluations might be a good start for identifying problems, however, they cannot establish a cause-effect relationship. For the latter, quantitative evaluation of the randomized or natural experiment kind is necessary.

- Make politicians realize that spending on education is not an expedient investment. It takes a long time to build human capital and an even longer time for that capital to yield returns.

1. Introduction

A widely accepted conventional wisdom today is that education is a catalyst for economic and social development. Following what has been described as the human capital revolution in economic thought (Bowman and Anderson, 1963), in the last 60 years there have been significant studies showing that investment in education pays high dividends in terms of economic growth and improving social conditions.

In this context, there is concern in Albania that its educational system falls short in contributing to the country's socioeconomic development. School participation rates are low, especially for vulnerable groups in society. Many Roma children and those living in rural areas are out of school. The quality of education is among the lowest compared to other countries, and so is the financing of education.

In an effort to support the country's National Pre-university Education Strategy and meet the benchmarks for its European accession, the purpose of this study is twofold:

- First, to provide evidence for the potential benefits to the country of increased public funding for education;

- Second, to define educational policies that would contribute the most to the country's socioeconomic development.

The following section presents key findings from similar studies in other countries. Section 3 presents a diagnostic of the state of educational development in Albania. Section 4 reviews and adopts stylized data for the conduct of the study. Section 5 presents estimates of key parameters needed for assessing the loss associated with the cost of underinvestment in education. Section 6 provides estimates of that loss. The paper concludes with possible policies for using any increased public spending for education in an efficient and equitable way.

2. Findings from other studies

In recent years, there has been an increase in the literature on the cost to society associated with an educational system that falls behind agreed benchmarks, such as student coverage, early school leaving or financing. A mirror image of the loss is the expected gain by moving towards the benchmarks. The studies were precipitated by the European Commission's setting a target that the proportion of early school leavers should be no more than 10% by 2010 (European Commission, 2006, 2010, 2013; Psacharopoulos, 2007).

Annex 1 summarizes key findings from these studies. The measurement and size of the losses or gains found in these studies vary wildly because of differences in the methodology used and the degree of sophistication of the study based on available statistics. For example, reducing early school leaving in Romania would produce a benefit of about 1% of GDP according to one study (EFILWC, 2012), or 8% according to another (Varly et al., 2014). It would produce 40% higher lifetime earnings in Estonia (Anspal, et al. 2014), 120,000 pounds in the UK (Oreopoulos, 2006), $8.2 billion in Australia (Applied Economics, 2002), or 50,000 euros per Roma graduate in Hungary (EU, undated).

In cross-country macro studies, increasing the average number of years of schooling of the population by one year is associated with a rate of return on the investment ranging from 5% to 37%, increases per capita income from 3% to 30%, or an additional 0.5 percentage points to the rate of growth of the economy (Annex 1).

Because of data availability, the most comprehensive studies of this kind refer to the United States, where many young people, especially Afro-Americans, do not complete high school (Alliance for Excellent Education, 2006). Below are highlights of a landmark study done at Teachers' College (2005), Columbia University (Levin, 2007):

- The rate of high school dropouts in the United States entails a loss of $260,000 in lifetime earnings (compared to a high school graduate, $60,000 in taxes paid and $58 billion in total annual health bills.

- The country loses $192 billion (1.6% of GDP) in income and tax revenue with each cohort of 18-year-olds who never complete high school.

- Increasing the average years of schooling for dropouts by one year would mean 30% fewer murders and assaults, 20% fewer car thefts, 13% fewer arsons and 13% fewer burglaries. Increasing the high school completion rate by 1% would translate into $1.4 billion per year in reduced costs from crime.

- The benefit-cost ratio of preschool programs in terms of reduced costs of crime, drug use and teen parenting is 7:1.

Given the wide range of the studies' findings, the estimates should be considered as indicative, rather than read to the decimal point. But all studies on the subject agree that a country has much to gain by investing more in education.

3. A brief diagnostic

According to the World Economic Forum, Albania scored 68.23[1], with regard to the Human Capital Index,[2] ranking 70th out of 124 countries in 2016, behind all regional countries. This index measures outcomes in education and employment. The country's unemployment rate is reported at 17.4%, with youth unemployment as high as 33%. This indicates that Albania needs to address issues that challenge the quality of education conducive to the improvement of competencies of the labor force, especially among the young generation.

One of the main issues to affect negatively the output of the education sector in Albania, and a challenge to cope with at the same time, is the unsatisfactory levels of financing.[3] The financing of Education in Albania is centralized, at the primary, secondary and tertiary levels. Spending in the education sector in Albania amounts to 3.1% of GDP[4], as a combination of mostly public and some private financing. This is below the regional average, and significantly less than the OECD average of about 6.3%.

Recent trends show diminishing budgetary shares to the education sector. Spending in education has fallen from 11.3 % of total budgetary expenditures in 2005 and 10.4 % in 2013, to 9.5% in 2015[5]. Moreover, at the primary school level, Albania spends significantly less per student (US$ 570) compared with the average of OECD countries spending US$ 7,974, of course bearing in mind that Albania has a much lower per capita income relative to the OECD average.

With regard to the situation in different levels of education:

- Preschool education does not constitute a separate budget line and is reported together with basic education. It constitutes an average of about 60% of the budget of the Ministry of Education and Sports.[6] Preschool is not compulsory, although Albania's pre-university education strategy foresees providing for universal coverage of pre-primary-year-children by the year 2020. Despite efforts in recent years to improve school infrastructure and to develop early learning standards and curricula for preschool, the physical conditions – buildings, furniture, didactic means and the quality of preschool teaching remain challenges to be met in Albania.

In primary education the physical infrastructure in many areas, especially rural ones, does not meet contemporary standards. This is particularly true

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[1]   Finland ranked 1st with a score of 85.86.
[2]   http://www3.weforum.org/docs/HCR2016_Main_Report.pdf
[3]   The Pre-university Education Development Strategy 2014-2020, http://www.arsimi.gov.al/files/userfiles/apu/2016/FLETORJA-ZYRTARE-STRATEGJIA-APU_2014_2020.pdf
[4]   The Pre-university Education Development Strategy 2014-2020, Table 6, http://www.arsimi.gov.al/files/userfiles/apu/2016/FLETORJA-ZYRTARE-STRATEGJIA-APU_2014_2020.pdf
[5]   The Pre-university Education Strategy 2014-2020, Table 6, http://www.arsimi.gov.al/files/userfiles/apu/2016/FLETORJA-ZYRTARE-STRATEGJIA-APU_2014_2020.pdfent
[6]   Ministry of Finance, Budget Department

for infrastructure needed to respond to the learning needs of children with disabilities. The ratio between teachers and pupils in primary education is reported to be 1:16. But such figure masks discrepancies that exist between overpopulated schools in big cities and abandoned schools in remote areas where education is provided to very small groups of children. Moreover, the learning process in general, is not duly supported with didactic means, labs, and suitable furniture.

- Secondary education has experienced an increase in attendance. While in school year 2008-2009, the registration of pupils in secondary education was 80% of those completing compulsory education, in school year 2013-2014 it reached 93%.[7] Nevertheless, the rate of absorption from primary education is low in comparison with European standards of 95-100%. Secondary education is affected by infrastructure issues, starting with overcrowded classes in big cities or small numbers of pupils in rural areas.

Overall, all these three levels of education, while still adjusting to Albania's territorial reform, are in need of improving physical infrastructure, quality of learning, availability of didactic means, curricula and teachers' capacities, which in turn instead of being matched by adequate spending are experiencing diminishing levels of budgetary support.

Current levels of education spending raise issues of access, inclusiveness, disparities and efficiency of the educational system. Gradual improvements in access to primary (age 6-10) and particularly pre-primary (age 3-5) education over the past years are reflected in the current net enrolment ratios of 96% and 81%, respectively, in 2014, compared to 90% and 58% in 2008.[8] However, inequities in access associated with family income still persist. The urban-rural gap in PISA is substantially higher than that found in other countries, while students in private schools fare considerably better than their peers in public schools.[9]

Roma children benefit much less from early education, although since 2011 the number of Roma kindergartens has almost doubled.[10] Still, one in two Roma children drops out of school.[11] The out-of-school children also include many suffering from disabilities, with their exact numbers still unknown. In 2014, the UNESCO Institute for Statistics reported about 15,000 children of primary and low secondary school age not attending school in Albania.

The quality of education requires a drastic improvement and is recognized by the authorities to be a challenge to the educational system of Albania. Despite an upward trend in PISA results in past years, Albanian students' performance scores remain among the lowest in all of Europe and Central Asia, and among the lowest of all PISA-participating countries. PISA analysis attributes this to the

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[7]   Source: Statistics Office in M0ES
[8]   UNESCO Institute for Statistics. Data on Albania can be accessed at: http://www.uis.unesco.org/ DataCentre/Pages/country-profile.aspx?code=ALB&regioncode=40530
[9]   Education quality in Albania, an analysis of Pisa 2002-2012 results , World Bank 2013
[10]   Roma Children Access to Early Childhood Services. UNICEF. Tirana, 2015.
[11]   The Pre-university Education Development Strategy 2014-2020, http://www.arsimi.gov.al/files/ userfiles/apu/2016/FLETORJA-ZYRTARE-STRATEGJIA-APU_2014_2020.pdf

low quality of education in the early formative years – preschool and primary education. These results hold true as well for younger children, of the third and fifth grades, with 43% of children of those groups performing under the average and with Roma children performing even lower, in all subjects.[12]

- Out-of-school children deserve special attention as they should be a target for the implementation of educational policies to reduce their numbers. The profile of out-of-school children in Albania is based on work carried out as part of the implementation of three ministerial agreements on the identification and reintegration of these children in the school system (Observatory of Children's Rights, 2015).

Adolescent boys and girls leave school early. The figure on out-of-school children in Albania is as high as 15,000 children among primary and upper secondary aged children (UNESCO, 2016a). The causes forcing these children out of school are multiple, starting with living in remote areas to poverty and blood feud. These are children from **linguistic** and ethnic minorities, especially girls and boys from Roma and Egyptian communities, particularly at preschool and lower secondary school ages.

Children from the most marginalized groups are the least likely to access both preschool and pre-primary education (age 3 to 6 years old). Access to early childhood education is still limited, largely because of a lack of infrastructure, insufficient funding and the fact that it is not yet compulsory.

Although accurate data on children with disabilities are lacking in Albania, such children are very often excluded from schools for a variety of reasons, ranging from discrimination that deters them from enrolling, to the lack of appropriate services and positive enabling school environments near their home, to their parents' unwillingness to enroll them.

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[12] National Assessment of student achievements in the third and fifth grades, Albanian National Assessment Agency, 2015.

4. Basic indicators

Answering the research question posed in this study requires data on the costs and benefits associated with alternative budgetary allocations and educational policies. Table 1 gives a summary of the basic data needed to conduct a study of this kind.

Table 1. Data needs

Category	Indicators
Core	Educational system structure
	Length of each school cycle
	Enrollment ratios and absolute student numbers
	Out-of-school children
	Educational quality, learning in school
	Educational attainment, years of schooling
Efficiency	
	Costs
Fiscal	Unit cost per student/year, % GDP allocated to education
Private	Foregone earnings while in school, private education expenditure
	Benefits
Private	Extra earnings of the more educated relative to the less educated
Narrow social	Productivity differences and tax contributions between the more and the less educated
Wider social	Health, crime and civic effects of education
Equity	
Disparities	Gender, ethnic, regional
Distributive incidence	Who pays and who benefits from public education expenditure
For projections	Baseline and target budgetary allocations to education

The study faced at the outset severe data conflicts among the statistics reported by official government sources, the UNESCO Institute of Statistics, UNICEF, the World Bank, and independent researchers. Examples of such conflicts are given in Annex 2. Eventually, the following stylized parameters were adopted:

Table 2. Educational system structure and basic data

School cycle	Typical age group	Typical number of years spent in cycle	Students enrolled (2013)	Enrollment ratio (%)	
				Gross (2015)	Net (2014)
Pre-primary	3-5	3	81,488	81.3	81.3
Primary	6-10	5	195,720	107.2	95.5
Lower secondary	11-14	4	181,354	93.3*	85.3*
Upper secondary	15-17	3	151,937	93.5*	85.3*
Tertiary	18-22	4	176,173	93.5	62.7

Source: Students and gross enrolment ratios from information provided by the Ministry of Education and Sports; net enrollment ratios from World Bank Indicators.

 * Numbers refer to secondary education as a whole

Although the above quantitative indicators are more or less in line with those in countries at Albania's level of development, educational quality is another story. Albania ranks at the bottom of OECD's PISA achievement tests with little improvement over time, meaning that although students might be enrolled in school, they are not learning as their counterparts in other countries.

Table 3. Albania PISA scores by subject

Test year	Math	Reading	Science	Average
2000	381	349	376	369
2009	377	385	391	384
2012	394	394	397	395
2015	413	405	427	415

Source: OECD

Figure 1. PISA 2015 mean score in selected countries
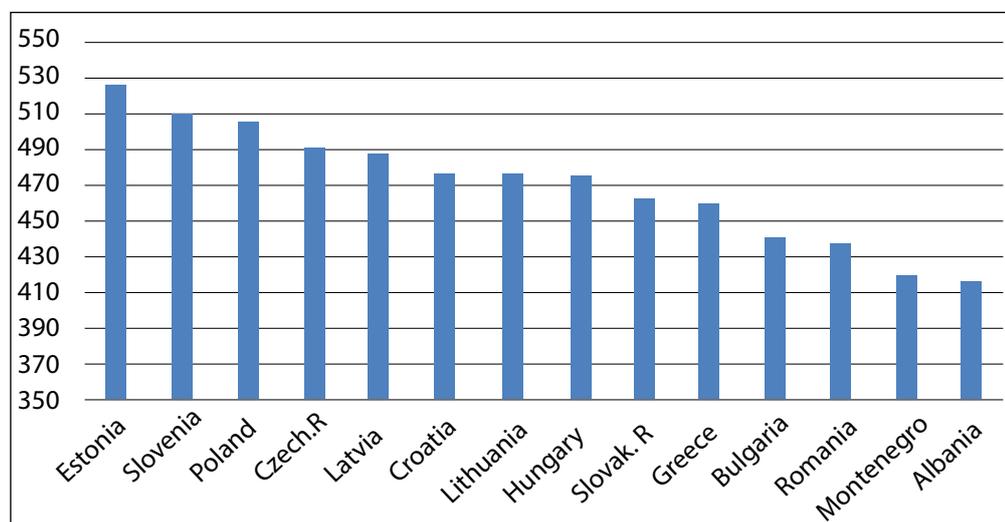
Source: OECD (2016c)

The share of top performers in the PISA test has remained at the lowest level since 2000.

Figure 1a. Share of top performers in PISA

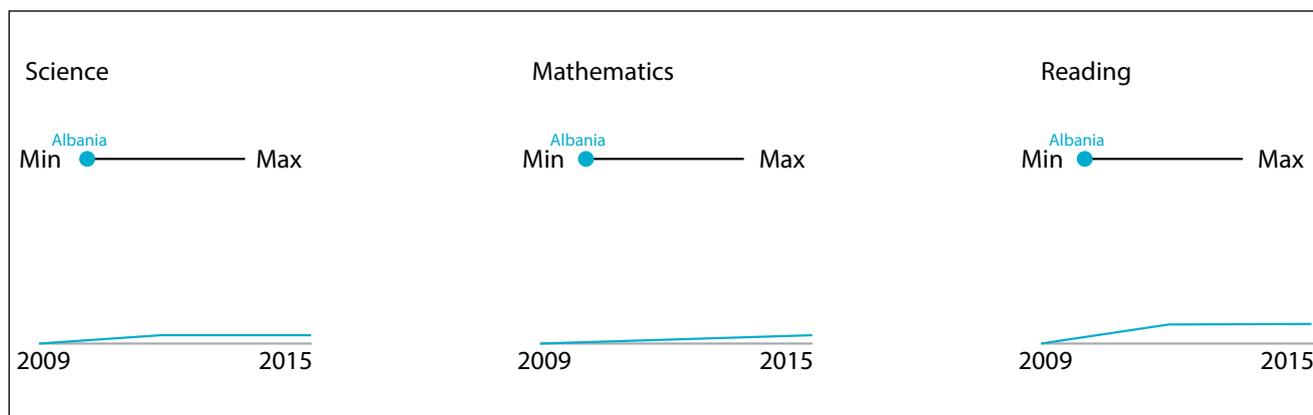Another area in which Albania is falling behind relative to other countries is education finance.   The share of GDP spent on education is 3.8% vs. 5% in EU countries. Public spending is 2.9% of GDP. Perhaps as a result of the low public spending, the share of private spending on education in Albania is nearly double that in EU countries. Such falling behind could be due to an insufficient priority for education, insufficient domestic resources mobilization, or both.

Table 4. Education spending as % of GDP

Source of funds	Albania	EU average
Public	2.9	4.5
Private	0.9	0.5
All	3.8	5.0

An important parameter needed in the simulations to follow is the unit cost of education, given in Table 5.

Table 5. Cost per student year (US$)

Educational level	2012	2013	2014
Preschool	n.a.	249	n.a.
Primary	474	489	570
Secondary	424	450	579
Tertiary	700	740	701

According to another source, Albania seems to spend considerably less than other countries on secondary and tertiary education.

Table 5a. Government expenditure on education, 2014

Country	Total as % of GDP	Per pupil as % of GDP per capita			
		Preschool	Primary	Secondary	Tertiary
Slovenia	5.7	24.3	30.0	30.8	23.8
Latvia	4.9	20.9	26.0	25.5	20.4
Lithuania	4.8	20.9	19.5	18.5	23.6
Poland	4.8	18.1	25.5	23.8	21.3
Estonia	4.7	10.8	22.6	26.5	20.0
Czech R.	4.3	15.7	15.8	25.4	23.9
Slovakia	4.1	15.5	20.7	19.9	25.1
Albania	3.5	n.a.	29.3	5.9	13.0

Source: UNESCO (2016b)

5. Key parameters

There are two ways to estimate the cost of not investing enough in education, one method being a mirror image of the other. First, what is forgone by not investing enough, and second, what could be gained by investing more.

The foregone costs or potential benefits of fixing an underfunded educational system fall into two major categories: First, those relating to the individual or the family, and second, those relating to society at large. The former are easier to estimate than the latter, known as non-market benefits or externalities. Table 6 gives a listing of the many dimensions of potential benefits or costs.

Table 6. Benefits associated with education

Beneficiary	Item
Private (individual, family)	Increased labor force participation
	Lower unemployment incidence
	Lower unemployment duration
	Increased earnings
	Better health
	Better consumer choice
Social (country as a whole)	Increased productivity
	Higher economic growth rate
	Positive spillovers on co-workers
	Increased tax revenue
	Fewer welfare payments
	Better civic behavior
	Less crime
	Informed voting
	Increased social cohesion
	Intergenerational effects

Note: "Higher" or "lower" in this table is defined relative to a control group or status quo situation of investing less in education

The losses or benefits associated with a different educational system could refer to the labor market, the fiscal implications, wider socioeconomic outcomes or equity. We examine these in turn.

Figure 2. Education effect channels

Figure 2. Education effect channels
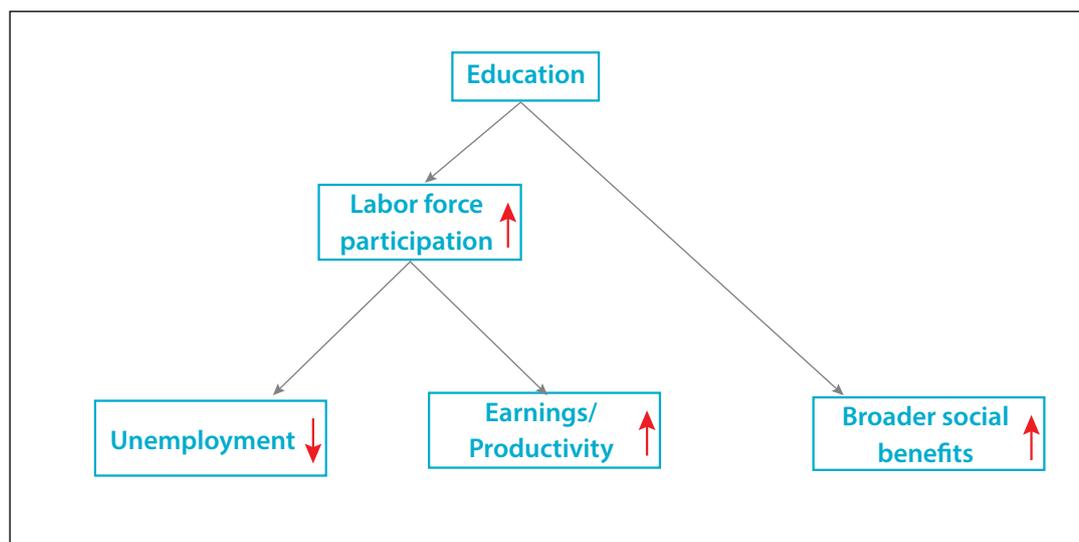
Labor market benefits

A higher level of education spending leads to enhanced educational attainment and a higher level of labor force participation. Data from the LSMS 2012 show that this is indeed the case in Albania, as in every other country in the world. And once in the labor market, the more educated earn considerably more relative to the less educated (Table 7). For facilitating international comparisons, costs and worker salaries reported in the survey have been converted to 2012 US$ using a 110 exchange rate to the Lek (Bank of Albania, 2016).

Table 7. Labor force participation and mean annual earnings by level of education

Educational level	Labor force participation(%)	Annual earnings(US$)
Primary	21	2637
Lower secondary	39	2862
Upper secondary	46	3399
Tertiary	75	4477

Source: Based on LSMS 2012, ages 15 to 65

Rate of return on education investment

The individual data recorded in LSMS 2012 allow us to estimate the rate of return on investment in education, a key parameter needed for estimating the loss from underinvestment.

We start by fitting the so-called basic Mincerian earnings function

$$(1) \quad \ln Y_i = \alpha + \beta S_i + \gamma_1 EX_i + \gamma_2 EX_i^2$$

where *LnY* is the log of wages of individual *i*, *S* the person's years of schooling and *EX* the years of potential labor market experience, defined as AGE – S – 6, in a school system starting at age 6 (Mincer, 1974),

(2) *LnY = 6.442 + .079 S + .035 EX – 0.0001 EX² R² = 0.15, N= 5151*

$$(28.9) \quad (8.6) \quad (8.4)$$

In this semi-log specification, the coefficient on years of schooling can be interpreted as the average rate of return to one additional year of schooling regardless of the educational level this year of schooling refers to. The earnings advantage of a worker with one additional year of schooling *is* $Y_s = Y_{s-1} + r\, Y_{s-1}$, or *($Y_s / Y_{s-1}$) = (1 + r)*. Taking logs of both sides of this expression results to $\ln Y_s - \ln Y_{s-1} \simeq r$, that is given by the β coefficient of the earnings function.

In our case, the rate of return to schooling of about 8% is in line with previous estimates for

Albania (Gjipali and Kristo, 2011; Miluka, 2015; Peet, et al., 2015) and countries at a similar level of development (Psacharopoulos and Patrinos, 2004a).

Refining the returns

The Mincerian method of estimating the returns to education has its limitations for use as the basis for estimating loss. In the first place, it estimates only the private returns to education rather than the social returns needed to arrive at an estimate of the loss. Second, it tacitly assigns foregone earnings to primary-school-age-children who may not have an opportunity cost. But the private rate of return is also needed to assess disparity issues and recommend educational policies. To bypass these difficulties we use the so-called "full discounting method", which" is a more accurate way to estimate private and social returns to investment in education as central parameters for estimating loss (Psacharopoulos, 1995; Psacharopoulos and Mattson, 1998).

LSMS 2012 data were used to create mean earnings profiles by age and education. Four levels of education have been distinguished that correspond to policy implications: primary, lower secondary, upper secondary and tertiary. The primary category includes the very few persons with earnings who have not completed that level of education.

Given the variability of earnings in the raw individual age-education earnings cells, earnings have been smoothed out by the parabolic function

(3) $Y_i = a + b\, AGE_i + cAGE_i^2$

where *i* refers to the particular age row in the earnings matrix.

The resulting age-earnings profiles appear in Annex 3 and are depicted in Figure 3. The shape of the profiles follows the typical pattern as observed in other countries.

Figure 3. Age-earnings profiles by level of education
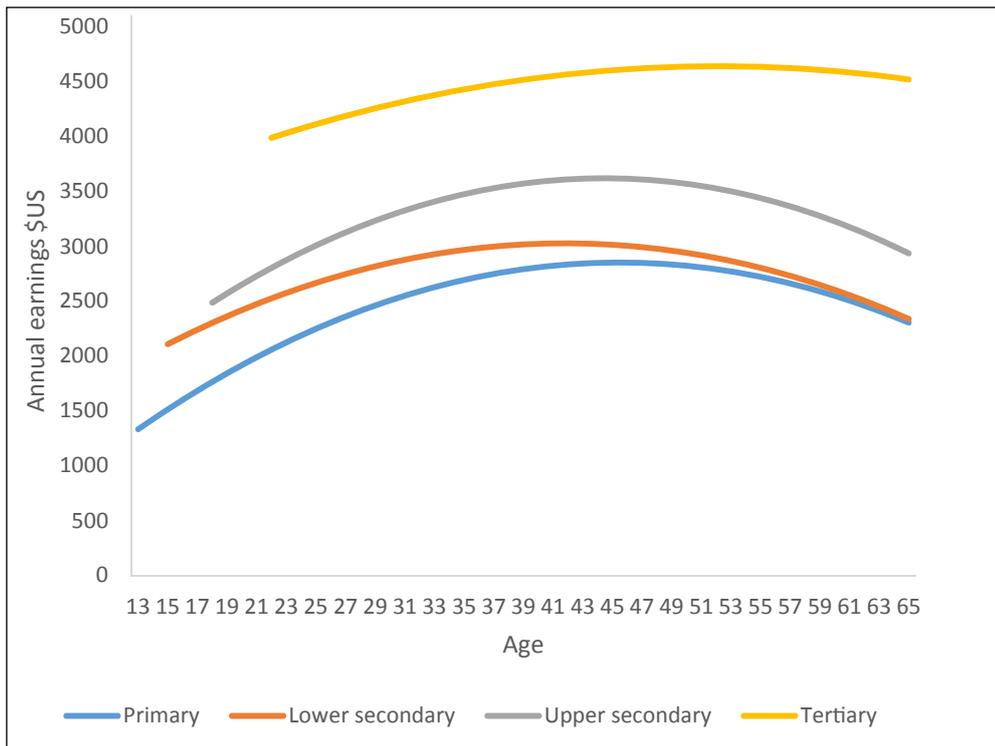
Source: Annex 3

On the basis of these profiles, the rate of return (*r*) to a particular education level was estimated using the following formula equating the present value of benefits and costs

$$(4) \quad \sum_{t=1}^{n} \frac{\left(Y_s - Y_{s\text{-}1}\right)_t}{\left(1+r\right)^t} = \sum_{t=1}^{n} \left(Y_{s\text{-}1} + C_s\right)_t \left(1+r\right)^t$$

where *Y* is the earnings with the subscripted educational level *S, S-1* is the previous education level used as a control group, C_s is the direct cost of education, *n* on the benefits side is the length of the working life of a graduate of level *S* and *n* on the costs side the length of educational cycle *S*.

Two kinds of rates of return were estimated based on the above formula, private and social. The private returns compare the after-tax earnings advantage of the more educated to the cost of obtaining their extra education measured in terms of their forgone earnings. The social returns compare the before-tax net earnings advantage to the full cost of education measured by forgone earnings and direct costs.

Private returns

The private returns were estimated assuming two years of foregone earnings for lower secondary education graduates, three years of upper secondary graduates and four years for tertiary graduates. To estimate social returns, the private age-earnings profile matrix in Annex 3 was modified in two ways. First, earnings were grossed up by the taxes paid by people in the respective earnings bracket (Table 8). Second, the resource cost per student, reported in Table 5, above, was added in the early ages of the profiles, assuming that lower and upper secondary education have similar costs.

Table 8. Tax rate by earnings bracket

Educational level	Tax rate on gross earnings (%)
Primary	11.2
Lower secondary	11.2
Upper secondary	13.3
Tertiary	16.2

Source: BaEr Consulting (2016)

The resulting private and social rates of return reported in Table 9 follow well known international patterns (Psacharopoulos and Patrinos, 2004a).

Table 9. Private and social rates of return by level of education (%)

Educational level	Private	Social
Lower secondary	16.5	9.2
Upper secondary	5.6	5.7
Tertiary	8.7	8.1
Overall	10.3	7.7

Source: Based on LSMS 2012 and parameters reported in the text

6. Estimating the loss

Fiscal losses or potential gains

As shown in the age-earnings profile matrix in Annex 3, investing in a particular level of education generates a stream of additional product in the form of increased earnings. Increased earnings also mean increased tax receipts for the state. Based on the gross age-earnings, Table 10 reports the estimated present value of the extra benefits produced by one extra graduate over his/her working life, along with the extra taxes paid to the state using a 3% discount rate.

Of course the extra benefits and taxes were generated at a cost, some of which were born by the state and some by the students in the form of foregone earnings. Focusing on the part covered by the state, Table 10 also gives the present value of the net fiscal cost for producing the extra graduate. The results show that the state loses by subsidizing lower secondary education, as it should be, but gains considerably by spending on the upper levels of education.

Table 10. Present value of labor market and fiscal benefits and costs

Present value per one graduate's working life	Per one extra graduate (US$)		
	Lower secondary	Upper secondary	Tertiary
Extra earnings benefits	9,361	15,346	34,463
Extra tax receipts	1048	2041	5583
Extra fiscal cost	1576	1199	2602
Net extra fiscal benefit (tax receipts – cost)	-528	842	2981

Source: Based on gross earnings differentials by applying the tax rates reported in Table 8 to the private profiles in Annex 3 using a 3% discount rate.

To put these numbers in perspective, assume that the government followed a policy of bringing to school and graduating 4,000 upper secondary education age children, i.e., one half of those now out of school. As shown in Table 11, the gain would be US$ 3.4 million or 0.03% of an US$ 11.5 billion GDP.

Table 11. Fiscal benefit as a result of enrolling one half of out-of-school upper secondary-school-age children

Extra upper secondary students	4000
Net PV of benefits per graduate (US$)	842
Total benefit (US$ million)	3.4
Net benefit as % of GDP	0.03

A macro estimate

Education expenditure – public or private – is an investment in building human capital that yields future benefits. Below we use Schultz's (1961) growth accounting for estimating in GDP terms the economic or efficiency loss associated with underinvestment in education.

Let human capital (K_h) be added as an independent variable in an aggregate production function explaining GDP (Y), along with physical capital (K_p) and the number of people employed (L):

(5) $$Y = f(L, K_p, K_h)$$

Differentiating the above function with respect to time and making elementary substitutions, the growth rate of output (g_y) can be expressed as

(6) $$g_y = s_l.g_l + \frac{I_p}{Y}r_p + \frac{I_h}{Y}r_h$$

where s_l is the share of labor in GDP, g_l the rate of growth of the labor force, I is the investment in physical (p) or human (h) capital, and r_h the rate of return on the respective investment. Although, given data availability, such function cannot be fitted to Albanian data, the last term of the equation can be used to simulate the effect of increased education spending on the rate of economic growth and GDP.

For this purpose, let us consider two steady states representing an initial condition (0) of investing I_0 \$ amount in education, and a scenario of increased spending I_1 in time period (1). In such case, the annual benefits associated with education spending in the two periods are

$B_o = r\,I_o$ and $B1 = r\,I_1$, respectively. Hence the difference between the two benefits represents the annual net loss of the country spending I_0 rather than I_1 in education,

(7) *Loss = B1 − B$_0$ = r I$_1$ − rI$_0$ = r (I$_1$ − I$_0$)*

The question now arises what value of the returns to education should be used in the simulation. There are three issues to consider.

First, there is an issue whether the returns to education estimated above represent productivity and are not the results of, say, screening in the labor market (Layard and Psacharopoulos, 1974). To test for this hypothesis, we fitted again the Mincerian earnings function within sub-samples of employees working in the public and private sectors of the economy. The results presented in Table 12 indicate that, as in every other country, the returns to education are higher in the private sector of the economy: 8% vs. 6.2%. All coefficients are statistically significant at the 1% level of probability, except the experience variables in the public sector indicating flat profiles. The about two percentage points difference in the returns means that employers value education and that earnings differences are not due to screening.

Table 12. Earnings functions for workers in the public and private sectors of the economy

Variable	Public sector	Private sector
Constant	7.348	6.320
Years of schooling	.062	.080
Experience	0.000	.042
Experience-squared	0.000	-.001
R^2	0.17	0.11
N	1323	3828

Notes: Dependent variable is the logarithm of earnings

Another issue is whether the returns to education would be the same in the two time periods and not lower in the second period due to educational expansion. However, global evidence indicates that the rate of return is very stable across time because of what Tinbergen (1974) described as the race between education and technology. That it, as the supply of educated people increases, so does the demand for skilled workers preventing the returns from falling.

A third issue is that the social returns estimated above of about 8% on average have been described as "narrow", in the sense that they are based on costs and monetary labor market benefits (Psacharopoulos and Patrinos, 2004b). As in any other country, education in Albania relates positively to the health status of the population. People with primary education as their highest qualification are several times more likely to be in poor health relative to the more educated (Table 13).

Table 13. Education and health status (%)

Educational level	Poor health	Chronic illness
Primary	5.0	13.5
Lower secondary	3.4	14.8
Upper secondary	2.2	9.3
Tertiary	1.1	7.2

Source: Based on LSMS 2012

It is very difficult to assign a monetary value to the non-market effects of education (McMahon, 1997, 2010; Lochner, 2011; Oreopoulos and Salvanes, 2011). Yet, taking the many other social benefits of education into account, such as better health, the Commission for Global Education Opportunity (2016) estimates that in upper-middle income countries, the wide net benefits of investing in education are double the narrow ones. Albania, with a per capita income of $4,590 in 2014 and $3,970 in 2015, is at the dividing line of $4,125 that the World Bank uses to classify countries into lower-middle income and upper-middle income categories. Hence, in our simulations reported below we adopted an overall 15% "wide" social rate of return.

The initial conditions or base period in our simulation refers to circa 2012, the year of LSMS and a GDP of US$ 11,500 million. Rounding up, the initial public spending on education was assumed to be 3% of GDP. Applying these parameters to the last term of equation 6, above, we get education contributions of one-half percentage point to the rate of growth of the economy, $r (I_0/Y) = 15\% \times 3\% = 0.5$.

The future conditions refer to a situation where public spending on education increases to 5% of GDP. Although this future time period could be 2020, we hesitate labeling it as such given the uncertainty that such an increase would be feasible in such a short period of time. Yet, the simulation is indicative of what the country could achieve in increasing spending on education, or losing by not spending it, regardless on when such increase would be realized.

Under the future conditions, the contribution of education to the economic growth rate is 0.8 percentage points, i.e., instead of the country growing at 2% per year, as it has done in recent years, it would now grow at 2.3%. The 0.3 percentage point difference on a US$ 11,500 million GDP corresponds to an annual loss of US$ 35 million assuming a 3% discount rate, the present value of such a loss over a 50-year period of human capital is US$ 900 million. This finding is largely consistent with previous estimates on a world-wide scale (Patrinos and Psacharopoulos, 2013; Barro and Lee, 2010).

Table 14. Estimating the loss

Time period	Public education spending share of GDP I/Y(%)	Growth contribution of education in percentage points $r (I/Y)$	Loss in growth percentage Points (Future – Base)	Annual loss of GDP (US$ million)	Present value of loss at 3% discount rate (US$ million)
Base	3%	0.5			
Future	5%	0.8	0.3	35	900

Another kind of loss associated with underspending on education is educational quality. As judged from the most recent PISA achievement tests, children in Albania score about 100 points lower than the OECD average. Hanushek and Woessmann (2008) found that a 1 standard deviation or 100 points increase in the PISA score, relates to 1.5 percentage points higher per capita income growth. Even if one half of this international finding applied to Albania, the loss reported above would be doubled.

Equity issues

Beyond the above efficiency-related estimates, there could be additional losses due to a series of disparities. When education-related disparities are reduced by investing more in education, beyond redressing equity on its own right, there could be a further boost in efficiency. For example, consider the earnings difference between men and women, which diminishes dramatically by ascending level of education.

Table 15. Annual earnings by gender (US$)

Educational level	Men(Y_m)	Women(Y_f)	Female disadvantage index(Y_f-Y_m)/Y_f
Lower secondary	3121	2006	-55.6
Upper secondary	3659	2649	-38.1
Tertiary	4770	4155	-14.8
Overall	3662	3130	-17.0

Source: Based on LSMS 2012

Although women earn significantly less than men in absolute terms, the returns to investment in women's education is 11.7% vs. 7.3% for men (Table 16). This apparently contradictory finding, explained by the fact women have lower foregone earnings than men, has been observed on a world scale.

Table 16. Earnings functions for males and females

Variable	Males	Females
Constant	6.318	6.154
Years of schooling	.073	.117
Experience	.052	.014
Experience-squared	-.001	.000
R^2	.14	.33
N	3,580	1571

Note: Dependent variable is the logarithm of earnings

Educational achievement in Albania is socially stratified and well above other OECD countries. Table 17 presents a social stratification index ranging from 0 to 1, a higher index indicating a high correlation between the student's performance in PISA and socioeconomic status. Stratification is bad because it denies opportunities and upward economic and social mobility to talented children.

Table 17. Social stratification

Country	Social stratification index
Albania	0.55
Latvia	0.47
Montenegro	0.40
Estonia	0.45
Croatia	0.46
Serbia	0.46

Source: Based on World Bank (2014a)

The average level of educational attainment between urban and rural regions differs by two years of schooling.

Table 18. Mean years of schooling by region, 2012

Region	Mean years of schooling
Urban	10.5
Rural	8.6
Country	9.7

Source: Albania Ministry of Education (2015)

In Albania, nearly one third of Roma women are illiterate vs. 5% for non-Roma. Roma women have spent an average of 5 years in school, as compared with 10 years for non-Roma women (World Bank, 2015b).

Roman children in the fifth grade score 29 points out of 100 in the combined national assessment of language, mathematics, sciences and citizenship assessment test, vs. a 45 average for the country as a whole.

Table 19. Grade 5 combined scores in language, math and civics

Roma	28.7
Overall	44.8

Source: Albania Ministry of Education (2015)

Table 20. Ethnic education disparities

Indicator	Roma	Non-Roma
Literacy rate (%)	65	95
Upper secondary enrollment (%)	13.5	60
Years of schooling	4.4	9.6

Source: Based on World Bank (2015b)

Over one-third of Roma families live below the poverty line of US$ 4.30/day relative to less than 20% for non-Roma. Poverty is directly related to education indicators (Open Society Institute, 2007).

Table 21. Early childhood indicators by income quintile

Characteristic	Poorest quintile	Richest quintile
Attends pre-primary	25%	60%
Learning materials at home	16%	52%
Adult learning support	68%	96%

Source: Based on World Bank (2015a)

A meta-analysis of 84 studies on the impact of early childhood programs found that such programs improve school readiness and academic skills. They also have a lasting effect on children's later life chances (Duncan and Magnuson, 2013).

7. Educational policies

The macro-analysis presented above, no matter how indicative, shows that Albania has much to gain by increasing its spending on education. The National Pre-university Education Strategy aims to increase education expenditure to 5% of GDP by 2020 (Albania Council of Ministers, 2015).

But an equally important question is, spending for what? And how to ensure the increased spending would be used efficiently rather than wasted? (Gupta, 1999; Hanushek, 2003). In this section we spell out possible policies to ensure the increased spending would be used in the most efficient and equitable way.

Set priorities

Increasing the share of GDP spent on education is a higher level political decision because it means cutting allocations to other sectors of the economy. And so is mobilization of new domestic resources.

Once the education budget is decided, in theory at least, it is up to the Ministry of Education to decide how to use the funds. Regretfully, in most countries of the world, budgetary allocations to education are typically determined by inertia, e.g., same as last year, perhaps adjusted for inflation. Or they are driven by rigid formulas, such as the number of students enrolled at a particular level of education. The alternative to inertia is setting priorities based on efficiency and equity criteria, something that requires a very strong political will.

Preschool

Extensive research based on longitudinal data that follow young children who have been subjected to experimental programs to adult life has shown that investing in early years yields the highest social returns, exceeding 20% (Belfield, et al., 2006; *Wall Street Journal*, 2013). This research has been lucidly summarized in the following graph by Nobel Laureate James Heckman.

Figure 4. Education investment priorities
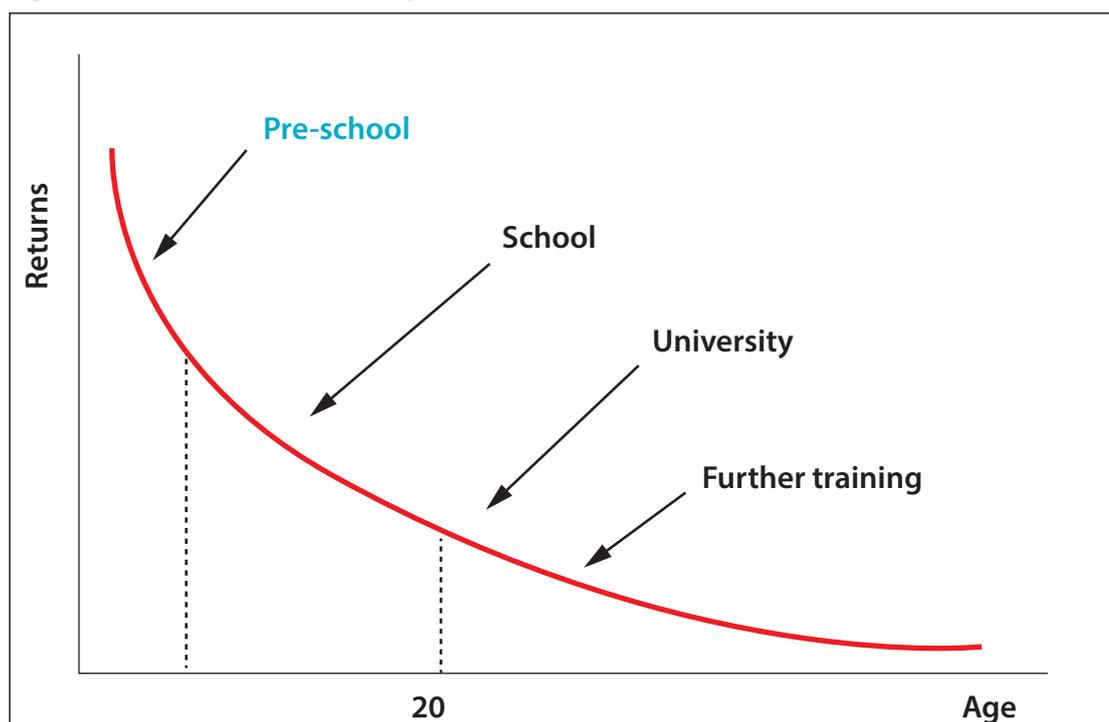
Source: Adapted from Heckman (2008)

Although preschool is not compulsory in Albania, based on international evidence, increasing preschool coverage should be priority No. 1 in allocating new resources to education. Enrolling 10,000 extra children in preschool, increasing the enrollment ratio from about 80% to 90%, would cost $2.5 million. It is expected that such investment would pay off several times its cost in the future, as well as having an impact on learning outcomes at the primary level and above.

The government should consider giving financial assistance to families in order to enroll their children in preschool, since children not attending preschool presumably come from the poorest families.

Primary education

With primary education becoming virtually universal, the focus should be on the 7,000 school-age children who are still out of school. At present unit costs per student, covering them in the system would cost US$4 million. But of course it could cost more given the difficulty of reaching such children. Whatever the cost, this would be another good investment, according to international evidence, not only in economic terms, but also as a basic human right.

The country could also target Roma children, especially girls, to enroll in primary education by supporting families to enroll their children and maintain attendance. The same strategy could be used regarding children with disabilities.

Secondary education

The government should aim at full lower secondary education completion. Bringing 2000 upper secondary school-age children to completion would cost $1.2 million, another good investment.

Again, those who do not complete lower secondary education must be coming from the poorest families, so they should be given a subsidy to offset the child's earnings, so that children do not have to be in child labor.

The quality of secondary education could be improved by setting up public-private sector partnerships (Patrinos et al., 2009).

Table 22. Reading score by school type, PISA 2009

| School type	Reading score
Public	378
Private	442

Source: World Bank (2014a)

Public-private school partnerships could be set up where the state finances education but the provision takes place in a private school (Patrinos, et al., 2009). This is the dominant secondary education finance model in the Netherlands (Patrinos, 2011), as are charter schools in the United States (Flaker, 2014). Another possibility is setting up a voucher scheme to be selectively distributed to the poorest families (Peterson, 2001).

Tertiary education

University graduates enjoy high private returns over their lifetime. Any expansion could be linked to the capacity of the student to pay fees. Any fees should be selectively combined with subsidies for the poor and student loans for all. This combination of policies introduces strong incentives for a more efficient and equitable educational system. It also releases resources to be spent on the lower levels of education.

Figure 5. Direct vs. indirect education financing
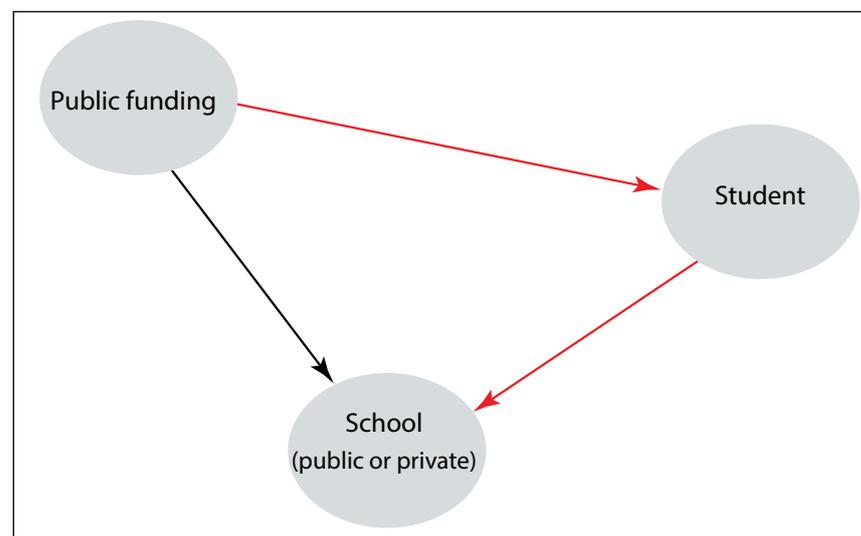
Institutional

The government should consider establishing the "3-As" system of Autonomy, Assessment and Accountability. There is extensive international evidence, based on randomized control trials, that moving educational decisions from the center to the school improves learning. School-based management can increase student achievement in mathematics by 0.5 standard deviations (Patrinos, et al., 2013).

Figure 6. The 3As for educational quality
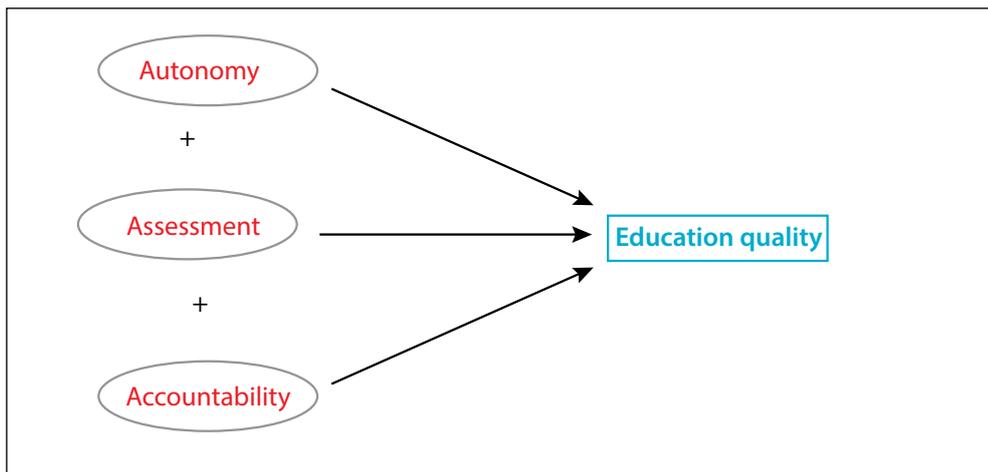
Source: Adapted from Patrinos, et al. (2013)

But assessment and evaluation require data, so a Management Information System (MIS) should be established for regular data collection (World Bank, 2014b). The data could range from basic education indicators on which existing statistics are in conflict – such as net enrollment ratios by level of education and unit costs – or refer to more sophisticated ones such as the following up of graduates in the labor market.

8. Epilogue

Educational systems in all countries, rich or poor, are plagued by a myriad of problems no country or donor can fix entirely, and Albania is no exception.

Several caveats are in order regarding the empirical findings reported in this study. The analysis was based on insufficient and often contradictory data from the various sources. This has been a macro study attempting to arrive at an overall estimate of the loss for underinvestment in education. Given better quality data, the analysis could be conducted by disaggregating education spending into different inputs, such as teacher training or pedagogical materials.

Nevertheless, based on significant rigorous education research in recent years, there is a broad consensus on a number of recommendations that, if adopted, would improve any educational system. Whether a given policy is adopted or not, is determined by the political economy of decision making in a particular country.

- For efficiency, establish priorities based on cost-benefit and cost-effectiveness analysis.

- For equity, consider the implications of any contemplated educational policy and its links to efficiency. Gender inequality affects economic growth by lowering human capital formation. Target specific groups such as girls, children from low-income families and ethnic minorities.

- Give priority to the lower levels of education, especially preschool, at it is at the very early ages that brain synapses are formed and any handicap would be perpetuated for life.

Reinvigorate policies that address better access to school in rural areas, and also gender equity. Regional disparity is one of the reasons for individual inequality in Albania of people living in marginalized areas. In addition, the quality of spending remains another concern that needs to be addressed, and it requires a more in-depth analysis than this study. Exploring ways to ensure that children are the ones who benefit most from the education budget, rather than it being spent on teachers' salaries is also a necessity.

- Give priority to general rather than vocational curricula and training. The reason is that a good foundation of general education facilitates later specialization and training. In addition, employers today want trainable employees with soft communication skills who can learn on the job, rather than narrow specialists.

- Introduce incentives in the educational system. Merit pay for teachers is one option; conditional cash transfers is another.

- Measure educational quality by output, not by input. Several studies have shown that traditional input measures of educational quality, such as expenditure per student, do not relate to student achievement.

- Correct the two most common sources of market failure in education: lack of information and credit constraints.

- Decentralize the educational system by giving education-related decision authority to schools, accompanied by evaluation and accountability. One without the other two in the golden trio will not do.

- Use rigorous evaluations. So-called self or qualitative evaluations might be a good start for identifying problems, however, they cannot establish a cause-effect relationship. For the latter, quantitative evaluation of the randomized or natural experiment kind is in order.

Finally, make politicians realize that spending on education is not an expedient investment. It takes a long time to build human capital and an even longer time for that capital to yield returns.

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Annex 1. Previous losses or gains

Associated with reducing early school leaving

Country	Effect	Source
Australia	$8.2b. present value of benefits	Applied Economics (2002)
Australia	0.28% of GDP	Allen Consulting Group (2003)
Australia	1.1% of GDP	Access Economics (2005)
Canada	$82,572 per graduate lifetime earnings gain	Oreopoulos (2006)
Colombia	0.43% of GDP	Thomas, et al. (2015)
Estonia	35% - 46% increase in lifetime earnings	Anspal, et al. (2011)
Estonia	1.1% of GDP	EFILWC (2010)
Poland	1.5% of GDP	EFILWC (2010)
Hungary	1.6% of GDP	EFILWC (2010)
Hungary	30,000 –70,000 euros per Roma graduate	EU (undated)
Romania	7% to 9% of GDP	Varly, et al. (2014)
Romania	0.9% of GDP	EFILWC (2012)
EU, 26 countries	1% of GDP742 to 5204 euros fiscal loss per graduate	EFILWC (2012)
EU, 9 countries	9 % to 21.1% increase in lifetime earnings	Brunello, Weber and Weiss (2012)
EU, 7 countries	4 to 8.5 percentage points lower probability of being in poor health	Brunello and De Paola (2013)
UK	$120,354 per capita lifetime earnings gain	Oreopoulos (2006)
UK	54 to 109 million pounds savings from crime reduction	Machin, et al. (2011)
USA	$121,000 to $294,000 per capita lifetime earnings gain	Rouse (2007)
USA	$148 billion in lost tax revenues	Levin, et al. (2007)

USA	$103,593 present value per graduate	Oreopoulos (2006)
USA	$183,000 benefits of high school graduation	Muenning (2007)
USA	$1.6 billion crime savings	Lochner and Moretti (2004)
USA	$8.5 billion fiscal savings	Vernez, et al. (1999)

Cross-country macro-estimated effects of one additional year of schooling

Effect	Source
30% higher GDP per capita	Heckman and Klenow (1997)
5% to 15% increased output per worker	Topel (1999)
0.3% per year faster economic growth rate	Bils and Klenow (2000)
18% to 30% rate of return	Krueger and Lindahl (2001)
3% to 6% higher per capita income	Bassanini and Scarpetta (2001)
3% to 6% higher per capita income, or one percentage point higher growth rate	Sianesi and van Reenen (2003)
27% rate of return	de la Fuente and Domenech (2006)
9.0 to 12.3% rate of return	Cohen and Soto (2007)
36.9% rate of return or 0.58 percentage points higher economic growth rate	Hanushek and Woessmann (2008)
12.1% rate of return	Barro and Lee (2010)
25% rate of return	Patrinos and Psacharopoulos (2013)

Annex 2. Data conflicts

Indicator	Most recent value	Source
Pre-primary enrollment ratio	89%	UNESCO (2016)
	81%	Albania Council of Ministers (2015)
	69%	World Bank (2015b)
	33%	van Ravens (2014)
Public spending on education as % of GDP	3.1%	Albania Official Gazette
	2.8%	Albania Ministry of Finance
	3.5%	Unesco Institute of Statistics
Cost per primary student	$1337	Unesco (2016)
	$570	Albania Ministry of Education
Cost per preschool student US$)	Not available	Albania Ministry of Education
	$190	van Ravens (2004)
	$307	World Bank (2015a)

Annex 3. Age-earnings profiles

Net annual earnings by age and level of education (US$)

Age	Primary	Lower secondary	Upper secondary	Tertiary
13	1332			
14	1424			
15	1513	2107		
16	1599	2174		
17	1683	2239		
18	1763	2301	2486	
19	1841	2361	2570	
20	1916	2418	2651	
21	1988	2473	2729	
22	2057	2524	2803	3989
23	2123	2574	2874	4031
24	2187	2621	2942	4072
25	2247	2665	3007	4112
26	2305	2707	3068	4150
27	2359	2746	3126	4187
28	2411	2782	3181	4223
29	2460	2817	3233	4256
30	2506	2848	3281	4289
31	2549	2877	3326	4320
32	2589	2903	3368	4350
33	2627	2927	3407	4378
34	2661	2948	3442	4405

35	2693	2967	3475	4430
36	2722	2983	3503	4454
37	2748	2997	3529	4476
38	2771	3008	3552	4497
39	2791	3016	3571	4517
40	2808	3022	3587	4535
41	2822	3025	3600	4552
42	2834	3026	3609	4567
43	2842	3024	3616	4581
44	2848	3020	3619	4593
45	2851	3013	3619	4604
46	2851	3004	3615	4613
47	2848	2991	3608	4622
48	2842	2977	3599	4628
49	2834	2960	3585	4633
50	2822	2940	3569	4637
51	2808	2918	3549	4639
52	2790	2893	3527	4640
53	2770	2865	3500	4640
54	2747	2836	3471	4637
55	2721	2803	3439	4634
56	2692	2768	3403	4629
57	2660	2730	3364	4623
58	2626	2690	3321	4615
59	2588	2647	3276	4606
60	2548	2602	3227	4595
61	2505	2554	3175	4583
62	2459	2504	3120	4569

63	2410	2451	3061	4554
64	2358	2395	2999	4538
65	2303	2337	2935	4520

Source: Based on LSMS 2012

Note: Earnings were smoothed out by the following quadratic functions fitted within each education category of the raw age-earnings profiles.

Subgroup	Constant	Age	Age-squared
Primary	-128	131	-1.44
Lower secondary	790	107	-1.28
Upper secondary	419	144	-1.62
Tertiary	2687	75	-0.72