Journal of Global Business and Social Entrepreneurship (GBSE)
Vol. 4: no. 5 (2016) page 32–51 | gbse.com.my | eISSN 24621714|

THE LINK BETWEEN EDUCATION AND ECONOMIC GROWTH-EVIDENCE FROM ALBANIA

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Abstract

The purpose of this study is to empirically examine whether a link between education and Albania's economic growth can be found and to analyze some of the potential implications for Albanian economic and educational policy based on general economic theory.This paper empirically examines the role of education in Albania's economic growth and explores the link between education and economic growth in Albania. It analyzes some of the potential implications for Albanian economic and educational policy based on general economic theory. Education investments foster technological innovation, make capital and labor more productive, thereby generate income growth. Empirical review attempts to estimate the true causal effect of education and training quality on individual earnings, the firm and the economy at large. Results give reason to believe that education may be an important influencer of Albania's long-term economic growth and thereby a relevant topic for Albanian economic policy. The study recommends that the government and the private sector, through public-private partnerships, should concentrate on policies that will improve the education system.

Keywords: Education, Economic Growth, Albania

2016 GBSE Journal

1. INTRODUCTION

This paper empirically examines the role of education in Albania's economic growth by adopting a country specific approach where co-integration techniques are used.

Various conceptual approaches have been used to explore the links between education and economic performance. While these links can be assessed at many different levels, such as the individual, the company, the sector or the economy as a whole, the focus is to investigate the links between education and economic performance at a macro-economic level. A macro-economic approach typically explores the quantitative relationship between aggregated investments in human capital and the level or growth of total factor productivity (TFP) or per capita GDP (Wilson and Biscoe 2004). There is a large number of theoretical studies on this topic, beginning with the classical growth models first developed in the 1950's, through to the new, so-called endogenous growth models.

2. LITERATURE REVIEW

2.1 Neoclassical growth models

One of the first economists to come up with a quantifiable growth model was Robert Solow who established the world-famous Solow's (neoclassical) growth model. At its most basic level the model follows:

$Y/L = F(K/L, 1)$

where Y represents total output, L is the number of workers, and K is the capital stock. Y/L thereby represents output per worker (and therefore income per worker) and K/L represents (physical) capital per worker. (Perkins et al 2001)

The equation tells us that capital per worker is fundamental to the growth process and consequently the core policy implication from this model is to focus on generating more (physical) capital in the economy. (Perkins et al 2001)

An unsettling conclusion of this basic model is that once the economy reaches its long-run potential level of income, economic growth will simply match population growth, with no chance for sustained increases in average income.

A modified version of Solow's basic model was launched where output was now not only contingent on capital and labor but also on the "quality" of the labor. Solow argued that the reason why high-income countries had been able to sustain their income growth over very long periods of time was that the technological progress that these countries had experienced, had allowed output per worker to continue to grow. The new, modified version of Solow's model is specified in the following equation:

$Y = F(K, T \times L)$

where Y represents total output (and therefore total income), K is the capital stock, L is the labor supply and T represents technological progress. In this specification, technology is introduced in such a way that it directly enhances the input of labor. (Perkins et al 2001)

According to Solow's model, technological change is determined independently of all the variables and parameters specified in the model. This can be linked to the assumption that countries cannot really affect their technological progress through strategic economic policy. Consequently, countries can neither really influence their rate of long-term growth.

This assumption does not only raise some objections from a theoretical point of view, it also limits the practical applicability of the model as a foundation for economic policy decisions. (Perkins et al 2001)

Consequently, a new "endogenous growth model" was developed to explicitly incorporate technology and recognize that technological change is dependent on economic decisions in the same way as (physical) capital accumulation. (Perkins et al 2001)

Economists Robert Lucas and David Romer came to pioneer this work on making technological advances explainable within the model framework and a large number of endogenous growth specifications have been put forward (Wilson and Briscoe 2004). One of the most typical specifications is the one by Robert Barro (1997):

$Ny = f(y, y^*)$

$y^* = f(Z)$

where Ny is the growth rate of per capita output, y is the current level of per capita output and y* is the long-term or steady state level of per capita output.

For a given value of y, the growth rate rises with y*, which is determined by a wide set of economic, policy and environmental variables. These variables differ between studies, but typically Z in equation contains variables measuring population (fertility and life expectancy), labor supply, government expenditure and investment, terms of trade, inflation, and, most significant for present purposes, different variables of human capital. Barro (1997) argues that any increase in the steady-state level y* will raise the per capita growth rate, y, over a transition interval.

In sum, while Solow's neoclassical model and the endogenous growth models make different assumptions on how technological advances come about, both approaches agree on the fact that differences in technological progress and total factor productivity constitute a key reason to why countries differ in national income. The fact that total factor productivity constitutes an important source of economic growth has received support from a large amount of empirical studies.

Although different studies have obtained different results on whether capital accumulation or TFP growth is the most significant contributor to economic growth, there is strong consensus on the fact that TFP is a major contributor to economic growth, and even more so for the higher per-capita income countries. (Perkins et al 2001)

3. EMPIRICAL EVIDENCE ON EDUCATION AND ECONOMIC GROWTH

Today there is strong theoretical support for human capital formation (in the form of education) as a significant and positive influencer of economic growth, but the question of just how to proxy for this variable remains an unresolved empirical issue. (Hanushek and Kimko 2000)

The vast majority of macro-economic, empirical research on the links between education and economic growth has been conducted using cross-comparative data, either averaged across a sample of years, or taken over several years in panel data format. So far, there are relatively few - though a growing number of - studies that, like this one, attempt analysis of an individual country (Loening 2002).

One of the most acknowledged studies is the one of Jenkins (1995) who explores the links between education and economic performance for the UK in the period 1971-92. While Jenkins' study gives further evidence to a significant, positive impact of education on TFP, the limited time period for this study suggests the need for caution in interpreting these results (Wilson and Briscoe 2004).

A recent study is the one of Fortuna and Teixeira (2003) that assesses the role of human capital and innovation capability for Portugal's economic growth during 1960-2001. By using various co-integration techniques, Fortuna and Teixeira show that human capital, proxied by average years of schooling, is an important source of TFP growth.

Babatunde and Adefabi (2005) use a similar methodology to the one of Fortuna and Teixeira (2003) in order to investigate the long-run relationship between education and economic growth in Nigeria between 1970 and 2003. Using average years of schooling as a proxy for education, their results suggest that a well-educated labor force is linked to economic growth both as a separate factor in the production function (as the augmented neo-classical approach suggests) and through total factor productivity (as the endogenous approach suggests)..

3.1 How to best proxy for education?

Because human capital in its broader sense may encompass a range of characteristics such as education, work experience and health, it is extremely difficult to practically measure human capital. Even when a narrower definition of human capital is used, (such as formal education), there is still a lot of debate as to which type of proxies best capture this variable. (Hanushek and Kimko 2000) "The ability to solve problems, to think creatively, to read facts and to reinterpret those facts in the light of changing circumstances"; these are some of the key elements that economists seem to view as critical components of educational outcome that are likely to affect total factor productivity and thereby economic growth. (Jones and Schneider 2006)

3.1.1 Proxies reflecting educational quantity

So far, measures reflecting the quantity of education - the most popular ones being literacy rates, average years of schooling and enrolment rates - have by far been the most frequently used proxies in empirical research (WöTmann 2000). However, as outlined below, there are several pros and cons of using these proxies respectively.

Statistics on literacy rates has for a long time served as a measure of human capital. However, as more recent studies have found, the applicability of this proxy is quite limited as it only reflects the most basic level of education obtained. Consequently, measures such as average years of schooling and enrolment rates have become acknowledged as more nuanced proxies for human capital. (Barro and Lee 1996)

The advantage of using schooling enrolment rates is that data for this proxy is typically available in most countries, even in the less developed ones (Barro, 1991; Levine and Renelt, 1992; Barro and Sala-I-Martin, 1995). The main drawback of using this proxy is however that it only reflects

the current flows of education and not the actual stock of human capital built up over time. (Barro and Lee 1996)

Dissatisfied with the above proxies, authors, such as Kyriacou (1991) and Barro and Lee (1996), have constructed more elaborate ways to measure educational quantity. One of the most acknowledged attempts to quantify the stock of human capital among workers is that of Barro and Lee (1996), who estimate the average years of schooling for the population aged 25 years or older for a wide range of countries. While this proxy comes closer at estimating the level of human capital built up over time, the drawback of defining human capital by average years of schooling is that it implicitly gives the same weight to any year of schooling acquired. This hence disregards microeconomic findings indicating that the marginal financial return for the individual (the marginal wage) typically decreases with the acquisition of additional schooling.

Regardless which proxy is used of the above, the overall results from empirical studies have been surprisingly weak and inconsistent. This has lead to an increased focus and debate on which proxies are most appropriate for estimating a country's human capital. (Altinok 2007) Pritchett (1995) argues that one of the main explanations for the difficulty in empirically finding a significant, positive relationship between education and economic growth is that the vast majority of studies only reflects the quantity of education and does not even partially take the quality of education into consideration.

The argument above receives support from an extensive study recently published by the World Bank (Hanushek and WöTmann 2007). The report provides evidence that it is not the years of schooling, but what skills students actually acquire during their schooling, that mainly determines how productive they will be when part of the labor force. According to this study, educational quality is likely to differ greatly between countries and therefore the impact of one additional year of schooling is likely to differ as well. Therefore, it is highly unlikely that the average student in a country such as Ghana or Peru would gain the same amount of knowledge in any year of schooling as the average student in Finland or say South Korea.

3.1.2 Proxies Reflecting Educational Quality

While empirical studies have shown indications that the qualitative aspect of education may be even more relevant than the quantitative aspect when proxying for human capital, it has proven far more difficult to find suitable proxies for the former than for the latter (Hanushek and Kimko 2000).

One way to account for differences in educational quality is to use proxies for the quality of educational inputs. Barro and Lee (1996) collect data on educational expenditure per student, student-teacher ratios, teacher salaries, and length of the school year to proxy for the quality of educational inputs. Sylwester (2000) also uses educational expenditure as a proxy and his study provides evidence that educational expenditure has a significant and positive impact on economic growth, but that there is a significant time lag in this causal relationship that has to be taken into consideration.

The results of the above-mentioned studies have been mixed, and the consensus seem to be that measures of educational inputs are not always strongly and consistently linked to the cognitive skills actually acquired, rendering them limited proxies for educational quality (Hanushek 2000).

According to WöTmann (2003), measures based on input disregard the huge differences in effectiveness and efficiency with which inputs are put to use in different education systems, and are therefore not always reliable.

Another way – and perhaps the more promising one in theory – is to use direct measures of educational output, such as student skills reflected in tests on cognitive achievement (Gundlach 2002). Hanushek and Kimko (2000) use data from a series of standardized, international student achievements tests in the fields of mathematics and natural sciences to build a measure of educational quality during the period 1960-1990. This study finds a significant positive effect of the quality of education on economic growth that significantly surpasses their estimated association between the quantity of education and growth.

Although the theory behind **Hanushek and Kimko's** results has received a lot of support from other economists, the number of empirical studies using this output-based proxy is low (Neri 2001). There are several reasons for this. Researchers using a cross-country approach are finding it difficult to find test results that are comparable across a large sample of countries. The alternative of using a time-series approach (where the focus is on an individual country) has also proven challenging. This is due to the difficulty in finding test results that can be observed for sufficiently long time periods and that are comparable from one year to another. (Wilson and Biscoe 2004)

4. ALBANIA'S ECONOMIC PERFORMANCE

Rapid economic growth is a relatively new phenomenon for Albania. Before growth took off in the mid-1998s, Albania had experienced occasional periods of rapid increase in per-capita GDP, but the rate of growth in those episodes was much lower than in the country's more recent experience, and not very different from the contemporaneous development in the world economy as a whole.
Figure 2.1 illustrates this economic development, showing how GDP per capita has evolved from 1998-2012 and the growth take-off in 2003.

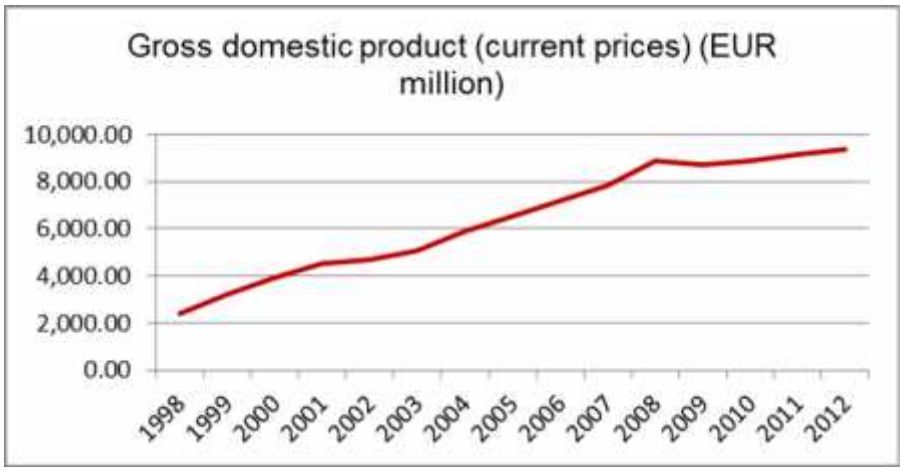


Figure **2.1** - GDP Growth, Source: EuroStat, 2013

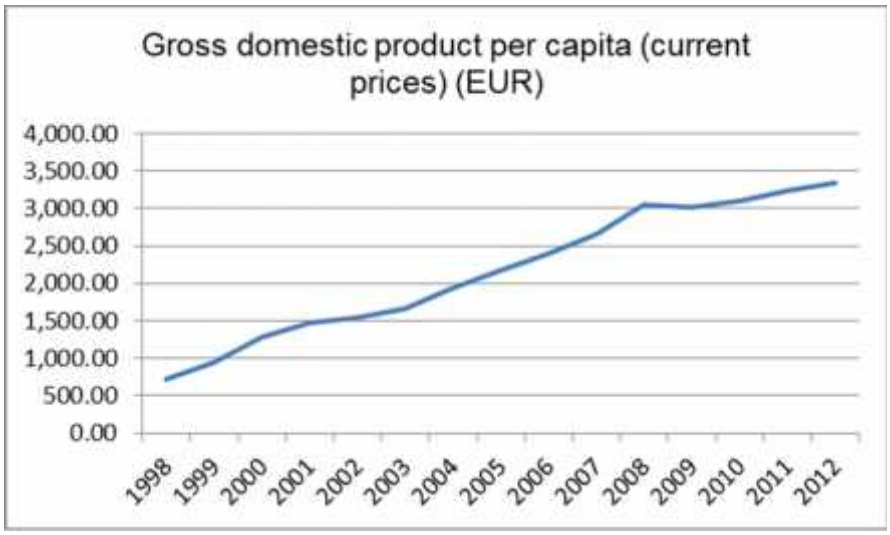


Figure **3.1** - GDP per capita, Source: Eurostat, 2013

The global economical crisis impact appeared lately on Albanian economy so 2009 displayed a decrease in the countries' GDP, due to the reduction of emigration remittances which constitute 15% of the countries GDP and the decline in industrial investment production developed out of cheap labor force.

Despite the rising figures on GDP per capita, Albania economic development is geographically uneven as investments are concentrated in the capital Tirana and the costal area. *"Tirana has a GDP index of 0.772, compared to a 0.252 for the mountain areas, and a Human Development Index (HDI) of 0.830 compared to 0.632 in the mountains"* (UNDP, 2005) The majority of mountains regions depend on migration remittances which provide about 15% of the country's GDP. The report of Albanian Central Bank (2007), Albanians would be living in less than $2 per day in absence of monetary transfers from abroad. (Albanian Central Bank 2007)

4.1 Albania's educational system

The topic of education has, since the return to democracy in 1990, occupied a prominent place in

Albania's political debate. To give a background to this debate, some relevant statistics on how Albania's student performance has progressed over time and relative to other countries are presented.

The education system in Albania encompasses public and private institutions, and includes the following school levels:

- Primary/Elementary school (educacion basica), which consists of nine grades.
- Secondary/High school (educacion media), which consists of three grades.
- Higher education (educacion superior), which is received at universities, professional institutes,
  or technical centers.

With its diversity of public and private schools and institutions, the Albanian education is currently managed through a combined system, in which the government has a conducting role; there is a decentralized public education and a strong private participation in the school system. Until recently, only primary education is mandatory in Albania.

Figure 4.1 illustrates Albania's progress in increasing the average years of schooling of its labor force.
The graph illustrates that the average level of schooling among the population aged 25 and older has steadily and significantly gone up throughout the entire time period of this study. In just the last decade, Albania has gone from very modest educational levels to levels almost at par with Western countries.

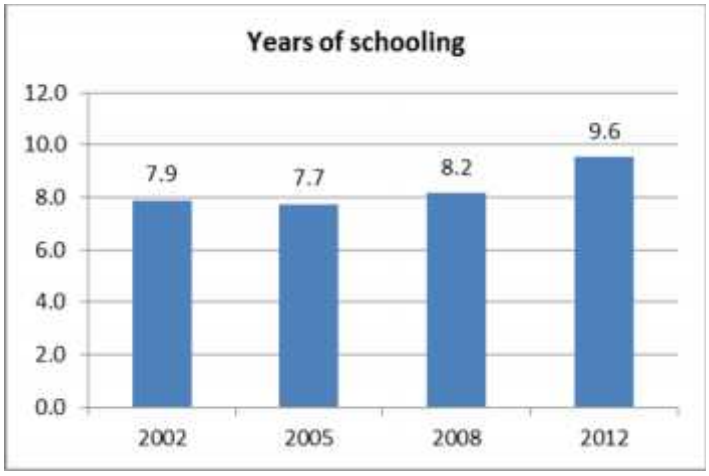


Figure 4.1 Development of average years of schooling among Albania's labor force, Souce: LSMS 2002, 2005, 2008, 2012

To nuance the development of public funding of education, figure 3.1 illustrate the development of Albania's public expenditure as a percentage of GDP and Albania's public expenditure per student during 1995-2012.

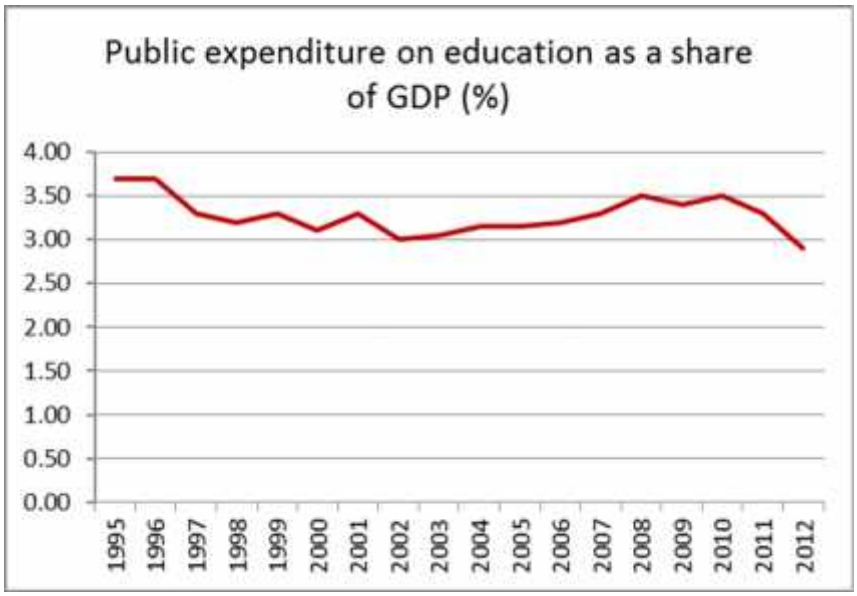


Fig. 4.2 Development of Albania's public expenditure on education as a percentage of GDP
Source: Eurostat, 2013

According to official data from the World Bank, investment by the state across all levels of education decreased from 3.7% of GDP in 1995 to 2.9% of GDP in 2012.
This means that in just over 10 years, Albania has constantly decreased the relative share of GDP spent on education.

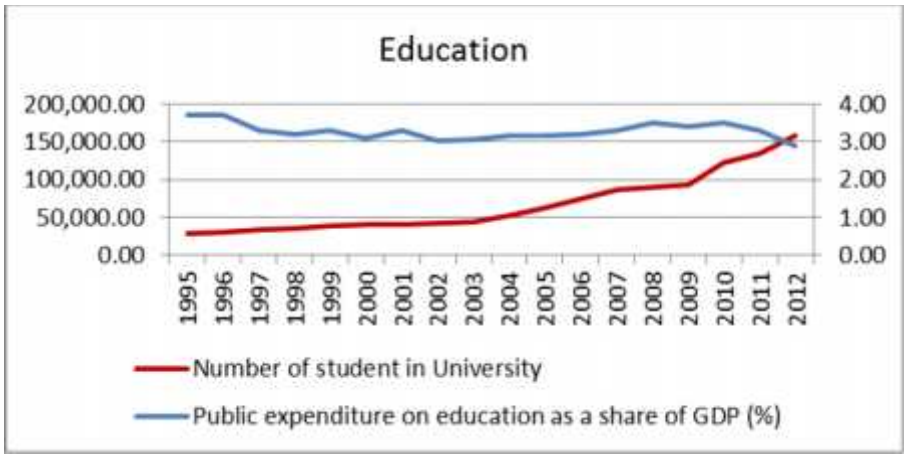


Fig. 4.3 Development of Albania expenditure on education to number of students in University
Source : LSMS 2002, 2005, 2008, 2012

Figure 4.3 illustrates how Albania's public expenditure on education as a share of GDP (%) has declined during the same time period compared to the rising number of students at the university. The graph shows a similar development where expenditure dropped during the years of recession, while the number of students in university almost doubled due to government reforms on school liberalization and high unemployment rates.

4.2 How do Albanian Students perform?

Fig 5.3 show that Albanian students are performing low by international standards. Albania is still underperforming relative to countries with similar per capita GDP. Respectively Albania students score approx.350 points on PSA Math Test Score.

Figure 5.3 Albanian student performance by international comparison

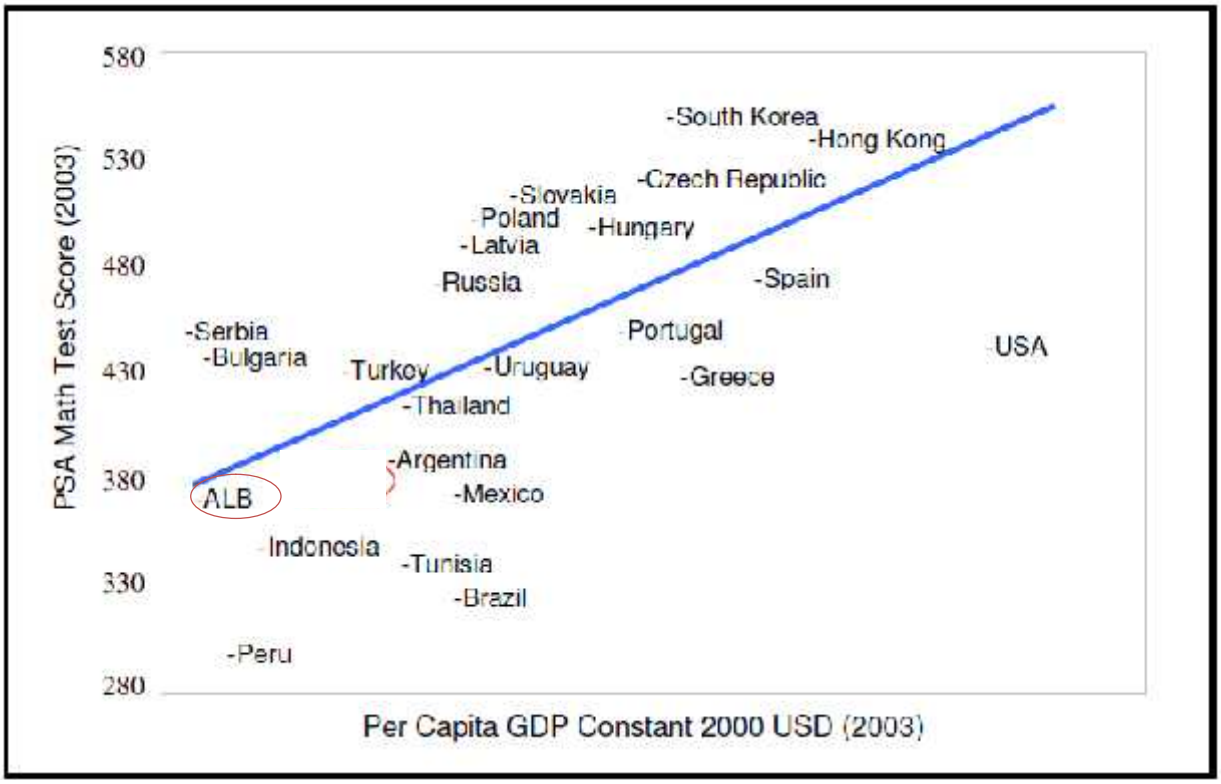


Fig. 5.3 PISA 2003 Math Scores and GDP. Source : Data from OECD (2003)

5. EMPIRICAL METHODOLOGY

The first part of the research work contains an econometric examination of whether a long-run relationship actually can be found between education and economic growth in the case of Albania. Based on the econometric findings, this study then uses a more eclectic approach to analyzing how Albania has performed in various dimensions of education and the potential economic and educational policy implications from these findings.

A model that allows to investigate the relationship between various educational measures and economic growth for the Albanian economy is deduced from the endogenous growth theory outlined in section two and has been specified with the guidance of other studies who uses a similar model for examining the link between human capital and economic growth in Portugal and Chile (Fortuna and Teixeira 2003);(Jenny Gustafson Backman 2008)

In more technical terms, the model is specified so that it allows for investigating the long run

structural relations between Albania's total factor productivity, Albania's educational quantity and Albania's educational quality. These structural relations are based on a log-linear specification of the joint evolution of total factor productivity (proxy of technological progress), educational quantity (average years of schooling) and educational quality (government expenditure on education as a percentage of GDP):

$$Ft = ßo + ß1Et\ quantity + ß2Et\text{-}x\ quality + ut \qquad [1\text{-}1]$$

where Ft is the (natural) logarithm of the total factor productivity (TFP) level for the year t; Etquantity is the logarithm of the average number of years of schooling (proxy for educational quantity) for the year t; Et-x is the logarithm of government expenditure allocated to the educational sector as a percentage of GDP (proxy for educational quality) for the year t – x. ß1 and ß2 are the TFP elasticities of educational quantity and quality respectively, and finally, ut is a random perturbation term

Total factor productivity (TFP) - and not GDP – is assigned to be the dependent variable in this model. As TFP is considered an important source of economic growth, this model allows us to investigate whether there is a link between educational measures and economic growth in the way that the endogenous growth theory predicts (Fortuna and Teixeira 2003), (Jenny Gustafson Backman 2008)

The underlying theory behind this model is that a more educated labor force (both in terms of the quantity and the quality of education undertaken) is the main reason behind the creation of more sophisticated technology. This technological progress will in turn lead to an increase in total factor productivity, which is an important source of long-term economic growth. In other words, productivity tends to increase when educational quantity (Etquantity) grows. Greater educational quality should over time lead to a more productive labor force. Therefore, theory suggests that productivity will be positively related to educational quantity as well as educational quality, that is ß1 >0 and ß2 >0. (Jenny Gustafson Backman 2008)

While TFP has been selected as the best available proxy of technological progress, it is important
to note that this proxy also has some limitations. As indicated by Abramovitz (1993), TFP is properly interpreted as a reflection of unmeasured sources of growth; it includes, besides technological advance, also changes in labor quality, gains from the better allocation of resources and those from the economies of scale – unless these are somehow measured. This means that educational measures may not be the only factors affecting TFP. However, as these other potential factors are not easily identified nor easily proxied for, the empirical model is limited to incorporating educational measures, proxying for human capital and thereby the potential for innovation and imitation of new and better technology. (Fortuna and Teixeira 2003), (Jenny Gustafson Backman 2008)

Both the quantitative and the qualitative dimensions of education are incorporated in the model

to give a more "all-encompassing" measure of education as a potential influencer of economic growth.

5.1 Educational quantity

This variable reflects the quantitative dimension of education, which has been a key focus of Albanian policy-makers. There are quite a few alternative proxies for reflecting the quantity of education, of which some of the most popular ones are literacy rates, enrolment ratios and average years of schooling.

Literacy rates provide some insight into the level of education obtained, but the problem with this measure is that it only acknowledges the first phase of human capital creation. Thus, using literacy rates as a proxy of human capital implies the implicit assumption that education beyond the most basic level does not significantly contribute to productivity. The last three decades of Albaniaan educational policy has to a large extent evolved around increasing the number of students attending secondary and tertiary levels of education rather than just making sure that graduates can read and write. This implies that literacy rates may be more applicable as a proxy for educational progress in less developed countries, than in a country like Albania that for some time has been able to take this basic skill more or less as a given for the vast majority of its population.

The second potential proxy for educational quantity is enrolment ratios. While this proxy is probably more applicable to this study than the proxy of literacy rates, it still has some significant limitations. Most importantly, this proxy does not meet the criteria of capturing the quantity of education obtained among Albania's workers as this proxy only reflects how much education today's average student has.

Barro and Lee's (2000) introduction of using average years of schooling of the population aged 25 years or older as a proxy for educational quantity come closer to what this study tries to capture (namely educational quantity among Albania's labor force). However, this measure also has its inadequacies, stemming from the fact that a significant share of Albania's 25+ population consists of older people that are no longer part of the active workforce. As educational attainment among Albanians was relatively low just a few decades ago, the older, retired people in this demographic group are likely to represent lower averages of schooling, bringing down the overall average of schooling of the population aged 25+. This means that this proxy may underestimate the average level of education among currently active workers. A proxy that directly measures the average level of schooling among Albania's labor force would therefore be more desirable for the purpose of this this study.

5.2 Educational quality

As outlined in the theoretical framework, it is not just the quantity of education, but also the quality of education, that seem to matter for economic growth. Therefore, the model expressed

in equation [1-1] also includes the variable educational quality in order to incorporate the qualitative dimension of education and its potential link to TFP.

There are several alternative proxies for educational quality in the empirical literature, ranging from input-based to output-based measures. Student test results on cognitive skills, is generally considered the better measure, as it directly measures what skills students actually have obtained. But, there is currently not enough data in Albania to compose sufficiently long time series for econometric testing.

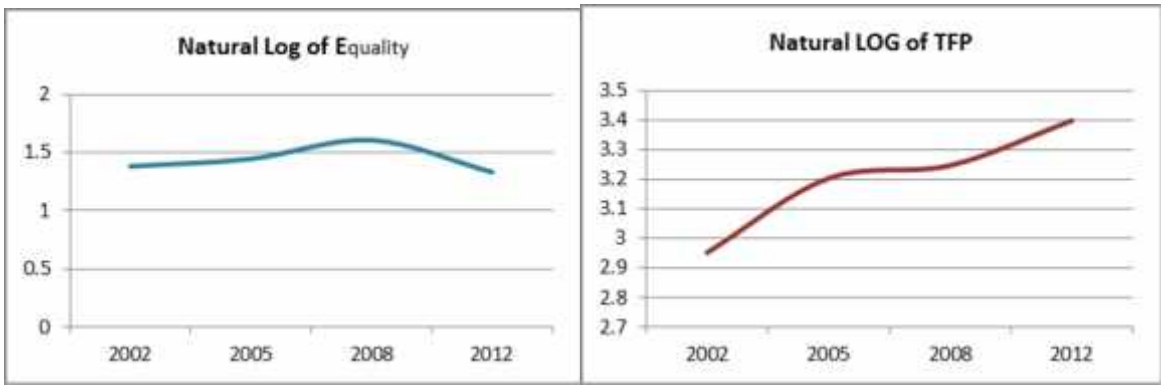
This study uses government expenditure on education as a percentage of GDP as a proxy for educational quality. This is partly due to the fact that out of the input-based proxies, this proxy has received significant support from other empirical studies (Mizala and Romaguera 2000; Teles and Andrade 2004). The reasoning goes that the government is typically directly responsible for the majority of the investments in basic education. It is hence possible to relate the accumulation of human capital to government spending. Another reason to why this proxy was used, is because it was one of the few proxies for which data is actually available.

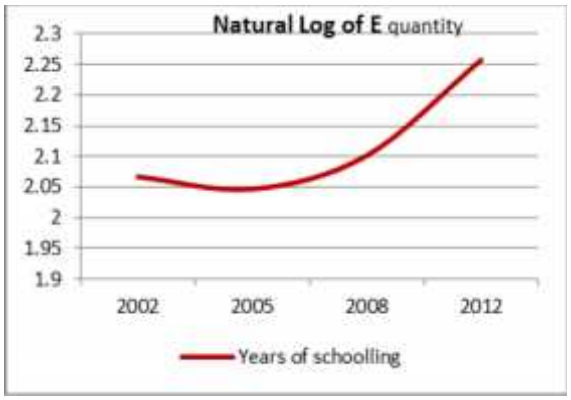
6. STATISTICAL RESULTS

The starting point of the econometric examination is to establish whether the time series are stationary or not, so that the appropriate method for testing the model in [1-1] can be established.

In many cases, particularly with macroeconomic data, it is quite possible to conclude, on the basis of theory and by looking at a plot of data against time, whether a variable is stationary or not.

Figure 6.1 below shows the evolution of our logged variables, being educational quantity quality(Etquantity), educational quality (Et-x) and total factor productivity (TFP).





Ft = LN (TFP)+LN(quantity)+LN(quality)

Fig. 6.1 quality(Etquantity), educational quality (Et-x) and total factor productivity (TFP). Source: LSMS 2002, 2005, 2008, 2012, World Bank

The graphs show that TFP and Etquantity seem to exhibit some strong positive trends over time, while Et-x quality shows more of a quadratic trend displaying a negative trend from the year of economic recession when its starts decreasing. The fact that all variables seem to exhibit strong trends, gives reason to think that these variables may indeed be nonstationary. Refering to Fig. 3.2 Public expenditure on education as a share of GDP (%) between 2002 and 2012, it could be implied that GDP is in correlation with Et-x quality .

6.1 Analysis

Is there a link between education and economic growth in Albania?

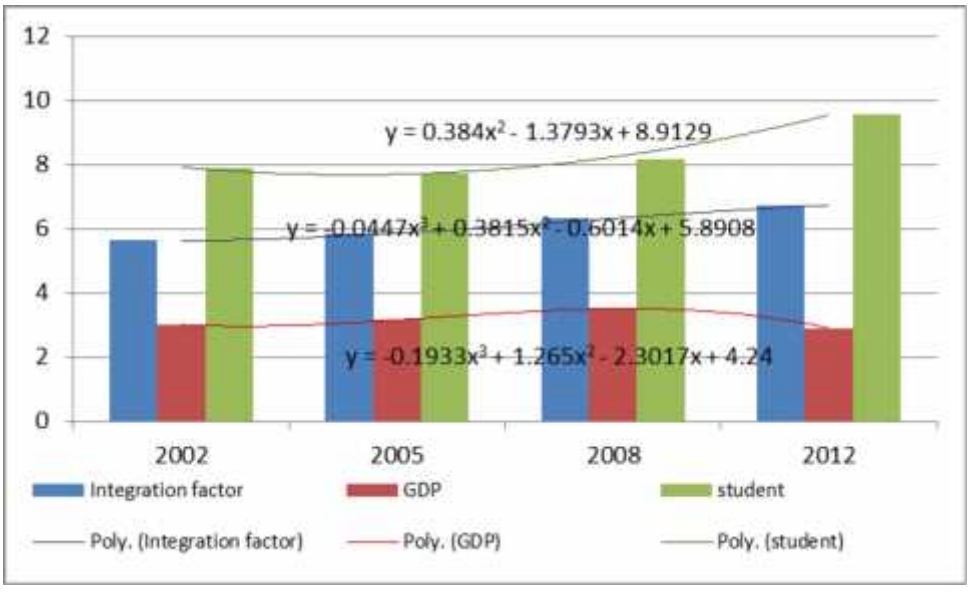


Fig. 7.1 Relationship between GDP and Ft, Source : LSMS 2002, 2005, 2008, 2012, World Bank

	Years of schooling	%GDP on education	Et-x quality	TFP	Ln TFP	Ln year	Ln Et-x quality	Ft
2002	7.899719	3.01	1.381579	19.13	2.951258	2.351643	0.323227	5.626128
2005	7.743903	3.15	1.445838	24.6	3.202746	2.284847	0.368689	5.856283
2008	8.177074	3.5	1.606487	25.7	3.246491	2.592542	0.47405	6.313083
2012	9.557081	2.9	1.331089	29.9	3.397858	3.044515	0.285998	6.728371

The econometric examination of this study gives an indication of co-integration between Albania's educational variables and the country's TFP. This would imply that factors such as educational quantity and quality are of relevance for Albania's TFP.

Analysis indicate that there is a warped long-run relationship between schooling years and GDP. In fact the percentage of GDP expenditure on education is decreasing while the number of students is increasing. Thus, could be acknowledged through the government policies in increasing years of schooling by liberalization of higher education to prevail lack of employment within the country.

As there is no other known country-specific study for Albania that empirically tests for the relationship between education and economic growth, this study cannot compare the results attained with other, similar studies on Albania.
However, a series of similar studies conducted for a range of other countries (Backman 2008, Fortuna and Teixeira 2003; Babatunde and Adefabi 2005; Francis and Iyare 2006) that also find some form of co-integration between these variables.

As developments in the areas of education and economic growth are somehow related, these findings also provide preliminary empirical evidence for the argument that education may constitute an important topic for Albanian economic policy. In other words, the current debate on how to improve Albania's educational policy may prove relevant not only from a social point of view, but also from a purely economic perspective.

In a sense, these figures can have both an optimistic and a pessimistic interpretation. On the negative side, Albania's TFP has not been at the level expected. Since TFP is considered an important source of long-term economic growth, Albania may therefore not be able to sustain its high growth in the future if there is not sufficient development in the productivity of the economy. On a more positive note, Albania has shown extraordinary growth figures in the last fifteen years despite lack of strong development in its TFP. This would imply that there is a lot of unrealized potential for Albania to experience future periods of high economic growth if the productivity of existing factors could be improved on. It is through conscious policy efforts, designed to promote TFP, that Albania can experience a higher level of sustained economic growth. As the econometric results of this study indicate that education may constitute an

important influencer of Albania's TFP, there may hence be strong, economic reasons to analyze how various aspects of education are best promoted.

Limitations : Albania effectiveness in education quality

Due to lack of sufficiently long time-series, output-based measures of educational quality could not be incorporated in the econometric examination of this study. However, Albania's effectiveness in raising educational quality can still be discussed on empirical grounds. If we define educational quality to be synonymous with student performance, efforts to raise educational quality through the allocation of more government funds would be considered effective if these additional funds generated a sufficient increase in student performance. In order to approach the answer to how effective Albania's efforts to raise educational quality have been, there is hence a need to evaluate if the decrease in educational expenditure has been reciprocated with a similar development in the performance results of Albanian students.

7. CONCLUSION & RECOMMENDATIONS

This paper has examined whether a long-run relationship between education and economic growth can be found in Albania.

The results provide further evidence to the theory that education is linked to economic growth via the technology parameter, roughly approximated by total factor productivity, and that Albania constitutes no exception in this area. These results also give reason to believe that education may constitute an important strategic topic seen from an economic policy-perspective.

This has given rise to a debate on whether efforts have actually been made in the right places. This debate has been further intensified by recent cross-country evidence from World Bank studies suggesting that it is the quality rather than the quantity of education that has the largest impact on economic growth. These results stand in sharp contrast to Albanian educational performance where the greatest educational achievement has been in terms of raising educational quantity rather than quality.

This could in turn explain, at least partly, why Albania has experienced relatively modest growth in total factor productivity, despite achieving quite good results in terms of raising the average years of schooling of the country's labor force.

The result that percentage of GDP expenditure on education is decreasing while the number of students is increasing, could be acknowledged through the government policies in increasing years of schooling by liberalization of higher education to prevail lack of employment within the country.

This study acknowledges that there is great relevance for further research in this area. In particular, additional work needs to be done to bridge economics and statistics so that economic models can be estimated further through the use of adequate statistical methods. By also testing if there are additional explanatory variables that have a significant impact on TFP, the research could be refined even further. This type of research could prove extremely valuable as the results from these studies would allow policy-makers to compare the estimated impact of different policy measures. Policy-makers could hence base their decisions on the estimated effect from different actions and select the one(s) that seems to give the highest return. This means that further research on the links between education and economic growth could ultimately provide policy-makers with a significantly stronger foundation for effective educational and economic policy.

Future research in this area would also benefit from using more precise proxies of human capital. Availability of data naturally sets some boundaries to what can be achieved in this area, but to the extent possible, future studies should aim to use proxies that are direct reflections of the variables they approximate.

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