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The returns of the education in the context of micro-macro analysis

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Abstract

The actual conditions require the information society and the information age. These developments increase the importance of the human capital. At this point, the role of the education is able to overcome information society because the knowledge and the education have been considered as the most effective tool for the economic system of a country. In this respect, the increase of human capital plays an important role to integrate all economic sector's capital.

The aim of this article is to describe the returns of education which are based on both individual and social returns in accordance with interactions in the world economy at micro-macro level and to present the results of these interactions. The individual returns of the education are described at micro level and its social views are explained at macro level. While the education is the most important factor of the human capital specifying the economic development and the growth at the macro level, the education effects on the individual's wage at micro level. Furthermore, we handle the theoretical basis of the returns of education.

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1. Introduction

An important paradigmatic change is socially experienced by globalization. As a result of this fact, some structural changes appear in the conditions of production. These changes form a new form of community as reflected on every field of community. This new form of community, which information and technology constitute basically, is called as "Information Society." (Dikkaya and Ozyakısır, 2006)

Information society can be defined as a rise period which informational sector, informational production, informational capital, and the factor of qualified person are significant by new technologies are developed, the continuity of education is emphasized, and society is carried from industrial community to an advanced situation economically, culturally, and politically within new developments like communication technologies, information

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highways, and electronic commerce. (<http://www.canaktan.org/egitim/universite-reform/bilgi-toplum.htm>) The main characteristic of modern societies, in this process when we called as “information society,” is the dominance of scientific knowledge on all operations and phases of society. (<http://www.egitim.aku.edu.tr/bilimfelsefesi.pdf>) Additionally, the need for informational transfer increases in our times with a bigger density than ever before. (Emiroglu, 2007)

It is a known reality that the countries where are able to produce and use information efficiently will have a voice across the world and the countries where are unable to do it will play second fiddle. That’s why, all countries increase their investments day by day on their education systems. The most important wealth of countries now appears as capability of producing information and qualified human resources they have, neither quantity of money nor natural resources. (Berberoglu, 2010)

In information societies, it appears that human capital gains importance as an economic factor in the recent years. This is a brand-new fact to realize the concept of “human capital”, which was expressed by Schumpeter in the beginnings of the twentieth century as “*constructive entrepreneurship*” and by Arrow in 1960 as “*learning by doing*,” and in modeling it in the theories of growth by internalizing it in a macro scale. (Eser and Gokmen, 2009)

Information society, which is usually achieved by the developed countries, refers to an important process to the development of the developing countries and the integration of countries into the globalization process. (Emiroglu, 2007) As emphasized before, this is possible only with education. In this context, highlighting the importance of education by the study, it is to assess its advantages within a micro and macro analysis. Because globalization, information society, and the process related to it take part in an important place in our life.

A considerable sign of how determinative information and information society are in our life is the global meetings, which focus on some agendas like global security, human rights, economy, ecology etc., to be organized on information and information society anymore. The first of them was organized in the Canton Genf of Switzerland in 2003 with the participation of 176 countries, and the second was held in Tunis in 2006. (Cukurcayır and Celebi, 2009)

2. Education and Human Capital

The age that when we are present is the one when social, cultural, economical and technological activities speedily change and communities are deeply affected from these changes. These changes experienced had better appear as developments providing for communities to live in welfare and high living standards. In this context, the regular development of communities is possible only with their qualified individuals. This situation boosts the importance of education more, besides. (Genc, 2000)

When we define “education”, it means *a long-termed process* that plays a role for developments of individual and community, supports economic development, and preserves and improves cultural values. (Hesapcioglu, 1992) The close, far, and general goals of education provide different benefits for society. While education helps forming a strong community socially, it leads to be a powerful country in economy with its productive force that consists of the educated people. (Tas and Yenilmez, 2009)

Education is expected to perform three basic functions: the first is to socialize, the second is to get someone adopt knowledge, skill, attitude, behavior, and habit, and the third is to incline toward the profession, bringing one in some professional capabilities. The success in the education is tied to whether these functions are realized or not. We can measure the realization situations of these functions in the education system by the emergence situations of their individual and social returns that are expected from the education. (Caliskan, 2007)

The concept of human capital is defined as the accumulation of investments in such fields as education, health, on-the-job-training and migration that enhance person’s productivity in the labor market and also in non-market activities. (Sharpe, 2001) According to another definition, information and skills in an economy indicate the qualified labor force. (Simsek and Kadilar, 2010) That is the unity of the elements increasing the quality, efficiency, and fertility of labor. (Tiryakioglu, 2008) This concept was brought in the literature of economy by the studies of Smith, Marshall, and Mill and its existent meaning was developed by such economists as Denison (1962), Schultz (1968), and Becker (1964). (Eser and Gokmen, 2009) Human capital is person’s productive capability, knowledge, and skill and this capital is measured by the value of goods and services that are produced. Also, the value of person’s human capital is the same with the consumption value of goods and services that he produces. (Thurow, 1970, cited from Hobikoglu)

This constitutes the framework of Economist Theodore W. Schultz’s concept of human capital. (Dogan and Sanli, 2003) With regards to Schultz (1968), “Useful capabilities that person owns” are the element of human capital. (Schultz, 1968)

If a goods or service has a benefit only for a period, we see it is defined as “consumer goods”. However, if having a benefit for future, it is investment goods. There are some goods and services that, they gain favor for both periods. Education including in a third definition, it is described as both investment and consumer goods. (Ozsoy, 2008) Education is consumption when gaining a temporary favor, but it is investment when determining the capacities of individuals in the future production and acquisition. (Gülpek, 2012) Educational expenditures are the basis of investing on human. (Savas, 1979) These investments include the following characteristics in micro economically: 1. It is a continuous investment. Income acquired differs from educational term. 2. Individuals have high chances to get more incomes in every new educational grade. 3. It is in question that educational investments are indivisibility. 4. Investments on education can differ during human’s life. (Ozsoy, 2008)

Countries take steps in transferring their structural changes in the education system and so the education on the global arena by global policies. That’s why, the countries investing on education to achieve the standards in the information society assess it as a strategy of development. The countries in this effort attach importance to human capital in this manner. (Dikkaya and Ozyakısır, 2006) We see the relationship of education and human capital in the context of developing individuals. (Colak, 2010)

It is very important to develop human capital and use it effectively especially for the less developed and the developing countries. In order to develop human capital, it needs a well-educated and healthy society to develop human capital. (Eser and Gökmen, 2009)

The most important feature of education is to invest on the future of individuals, firms, and communities. Education plays an important role for transforming the economic and social life, namely, raising the level of welfare and the quality of life. Education is in the center of such political areas as participation, income distribution, poverty, social harmony, and preservation of environment in social, and growth, force of competition, and increment of productivity in economic. (TUSIAD, 2005) Additionally, knowledge and education are seen as the most effective tools of development, improvement, and respectability. (Aydın, 2003) Moreover, the development of country is linked with people there to receive a suitable and continuous education and contribute to economic growth with knowledge and capability that they obtain in this manner. Individuals in the center of development should be raised awareness and equipped with the desires of researching, working, learning, and thinking. Therefore, the most important propulsive force of socio-economic development and the most significant element of productivity increment are the educational level of society and labor force. (Cakmak, 2008)

3. Returns to Education

Education explains a kind of long-termed investment. There are significant uncertainties on the time and quantity of educational returns due to its nature. (Bakıs, 2012) In order to put the returns of education forwards in quantitative, the basic characteristics of person’s education should be expressed quantitatively. (Calıskan, 2007)

There are three important methods about the returns of education investment. The first, developed by Mincer (1974). Mincer’s method involves econometrically estimating an earnings function where log earnings is regressed on years of study and age/experience in the labour market. Under this description, the estimated coefficient on the years of study variable represents the rate of return to an additional year of education. More general specifications include dummy variables that distinguish between years of education or the last level of education obtained. A second approach covers computing the ratio of discounted net benefits to total costs. This method does not measure the internal rate of return to education as it depends on an assumed value of the discount rate used in the calculations. And a third method involves the calculation of the internal rate of return associated with an investment in education in much the same way as one would compute the profitability of a financial asset. Specifically, this method computes the rate of return as the internal rate of return that equates the net lifetime discounted benefit from pursuing the educational investment with zero. (Stark, 2007)

In human investment that may be realized in micro and macro levels, it is explained the investment that a person makes for himself in micro level and a firm performs with human factor. Human investment in macro level includes the human investment made by the state. (Tunc, 1998) In the analysis of this paper, the return of education is going to be explained in a theoretical manner with some examples under the light of the studies done.

3.1. Evidence at The Micro Level

The micro return of education is inclined towards the calculation of individual and social returns of definite educational levels and occupations. (Ozsoy and Surmeli, 2012) We can analyze the economic returns to education

with Figure 1. Michaelowa (2000), has stated expected returns of education.

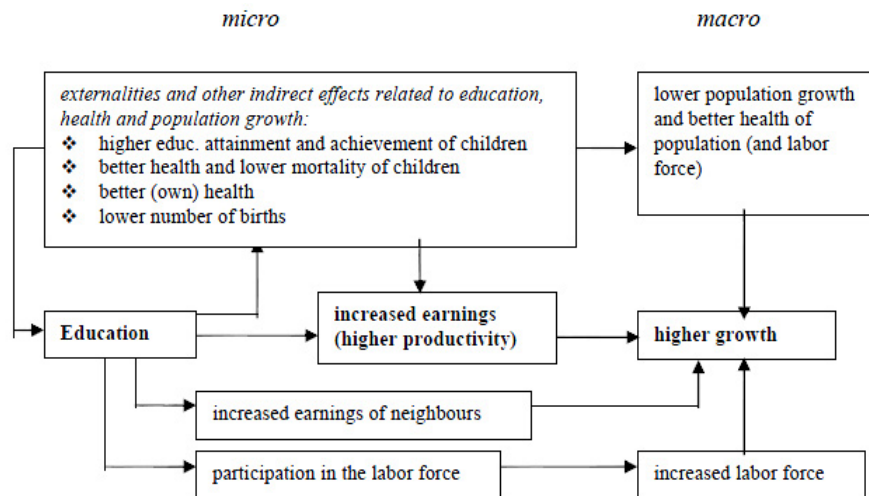


Fig. 1. The Returns of Education, Michaelowa, 2000 p.2.

Figure 1 shows that at the micro level, the direct link between education and individual earnings will be at the center of this figure. At the micro level, education earnings and earnings of neighbours increases. Moreover, this level leads to participation in the labour force. At the macro level, lower population growth and better health of population results in higher growth.

3.1.1. Private Returns to Education

“*Individual return*” means the appraisal of education under the light of costs that directly fall to a person’s share and in its benefits. (Stark, 2007) Individuals educate themselves for wide range of reasons. One is personal satisfaction: Education as a consumption good. At the same time, since Schultz (1961) and Becker (1964) indicated the concept of human capital in the 1960s, education has mainly been seen as an investment. (Venniker, 2001)

3.1.1.1. The Relationship of Education and Income

Despite A. Smith, A. Marshall, and M. Friedman were interested in education, the studies about the effects of education and labor force on economic development could not show integrity until 1950’s. (Becker, 1992) Education was accepted as the most important component of the theory of “human capital” that appeared in 1950’s. Additionally, the link between education and income attracted the researcher’s interests considerably. The theory of human capital expressed that education is the most significant determinative of capital difference or income difference among individuals. (Caliskan, 2007)

By the theoretical developments in the educational economy, it was developed an empiric field that makes quantitative inferences. The causal relationship between education and profit was started by Mincer’s studies in 1970 and 1974. Mincer sets a causal relationship among a person’s study period, experience, and profit. This relationship contains gender, sector, and other observable variables. “Mincer’s output” or “educational return” is the coefficient that shows the effect of study period on profit via econometric methods. This output is important for education to introduce social data in influencing on a person’s life. Furthermore, despite the educational return is not directly calculated by this method of Mincer and it cannot explain the profit situation of person in some cases, the results obtained in similar to this equation can be named as “*educational return.*” (Egitim Izleme Raporu, 2011)

Mincer says that; educated workers enjoy at least three main advantages over less educated workers in the labor market: Higher wages, greater upward mobility in income and occupation. (Mincer, 1991)

One of the most important micro-economic characteristics of human capital investments is a person to get an opportunity for more income generations by human investment. This opportunity appears especially in educational investment. It can be lived an income increase as long as arriving at an upper educational level from a lower level. This situation can be defined as a difference in educational returns, and the educational return can be

different according to countries to be a developed or less developed country and such policies as the attributes of market, income distributions, and costs of education of these countries. (Tunc, 1998)

While the effect of education on income is analyzed within micro-economic analyses, the year when a person spends in the school is generally paid attention. The most significant advantage of these analyses is easily to reach this type of data particularly in the developed countries. Nevertheless, this data does not contain information about type and quality of education or curriculum. (Caliskan, 2007) *E.g.*, people's incomes who receive a university education in such member countries of OECD as Denmark and New Zealand are determined 25% more than those who finish a secondary education. Even this difference in some countries is more attractive, because it may reach 120%. (Bal, 2011)

Psacharapoulos expresses the rate of variables, which explain the income differences, may change according to the level of education and it is accepted as 0.77 averagely. Based on these studies, he developed the concept of "gain function." This function is follow as: (Woodhall, 1987)

$Y = (S, A, F, \text{age} \dots)$

S: Study Period, A: Capability (IQ), F: Father's Job

3.1.1.2. The Relationship of Education and Labor Force Participation

Education explains the process of training human resources. It should be established a planned formal and non-formal education for a person to be able to gain strength by physical and internal activities and in showing a change of behavior. Education is a *sine quo non* precondition to provide employment and quality of production in this context. Human resources appear as a variable dependent on factor of education. In order to fix the development levels of countries at present days, this variable plays an important role. The number of well-educated and qualified human force, the professional education provided for young people, the contribution to science, and other similar opportunities are among these indexes. (Bircan, 1998)

Main benefit of education is the lower risk of unemployment at higher educational levels. (Mincer, 1991) When the level of education in population, the labor force participation rate also tends to rise. Moreover, despite the high unemployment in countries which have high level of education, the question about how the role of education overcome of unemployment is still in the spotlight. (Kavak, 1997)

3.1.2. Social Returns to Education

"Social return" means the return provided by education in paying attention to all direct individual and public costs and benefits that fall to public's shares. (Stark, 2007)

When we describe of the social profitability of an investment in human capital, "the social rate of return" is the internal rate of return such an investment. (Sianesi and Reenen, 2003) That's why, benefitting from educational services makes both monetary and non-monetary contributions to person and community. (Gölpek, 2012) The social returns to an educational investment indicate the desirability of education investment to society. (Venniker, 2001)

The social benefits of education in terms of social harmony are expressed as less crime rate, democratization and participation, protection of individual health and more income acquisition. (Tas and Yenilmez, 2008) While much is known about the private returns to education, knowledge about the social returns to education is scarce. (Venniker, 2001) So the calculation of social benefit for educational investments is more difficult than individual benefit. (Tas and Yenilmez, 2008) However, the most comprehensive study done in this matter was in the book related to determine the values of educational investments, called "The Appraisal of Investments in Educational Facilities", which was made by the cooperation of OECD and the European Investment Bank. Under the study, three different scenarios about the results of educational expenditures of the three OECD countries are compared with each other. The first one of scenarios can be stated as the social benefit of educational expenditures and the natural development of this process during the internal growth. The second one is the changes that occur because the rate of educational investments to GDP increases by 2%. The third scenario is related to the conclusions happening because the schooling rate of secondary education is increased by 10%. (Turkmen, 2002)

The rates of returns calculated by the complete method for 83 countries on Figure 2, which indicates the rates of educational returns, show the rates of personal and social returns for primary, secondary, and higher educations. On this Figure, the personal return in each level of education is more than the social return. Because social return in education is less than personal return, it can be explained by social return shows a calculable minimum level. (Yumusak, 2009)

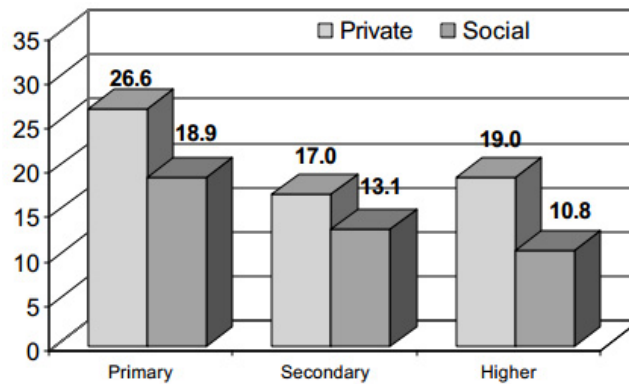


Fig. 2. Returns to Investment in Education by Level, Psacharopoulos, Patrions , 2002, p.15.

The study done in India about the social benefits of education provided important results for the outputs of female students' education. Under this study, it was achieved that the education of 1000 female students in the primary school cost 32.000\$ for one year, and it was returned profit 75.000\$ in favor of additional (educational) investments by the fertility rate are decreased; 32.000\$ by the child deaths are reduced; and 2300\$ by the malignant diseases are lowered. (Turkmen, 2002)

3.2. Evidence at The Macro Level

The macroeconomic return of education generally shows the role of educational expenditures on the process of economic growth. (Ozsoy and Surmeli, 2012) In the macroeconomic dimension of education, economic development and economic growth are researched.

The concepts of “*economic growth*”, “*economic progress*,” and “*economic development*” are mostly used in the same meaning for both written language and spoken language. However, we should distinguish it in several differences. According to Economist Amonn, who explains differences between “*economic growth*” and “*economic progress*”, and “*economic development*” at most consistently, the national economy changes in two ways in time. Firstly, the national economy grows and develops with its body. *E.g.*, its population increases, labor force mounts, and factors of production boost. Secondly, the body and roof of the national economy change. *E.g.*, the shares of agricultural, industrial, and service sectors in GDP change, the distribution of labor force in these sectors differs, and various changes are experienced in the infrastructure. Such increments in the national economy as population, labor force, land, and other factors of production are called as “*growth*.” “*Development*” or “*progress*” explains the changes that occur in the body and the roof of economy. (Acar, 2002) Moreover, “*development*” consists of the reflection of positive results in economic growth on community. (Coskun, 2009)

3.2.1. Education and Economic Growth

“*Economic growth*” means *growth* in per capita real income. (Kibritcioglu, 1998) Empirical estimation of the contribution of economic growth of education to economic growth dates back to 1957. Robert Solow published his seminal paper in this year. Solow’s paper is “The Review of Economics and Statistics. Solow’s aim was to estimate the contribution of labour, capital and technological change to economic growth in the United States between 1909-1949. Over this period, he used the aggregate production function. And also, he estimated the contribution of labour and capital and attributed the unexplained section of the total growth to technological advancement. (Giles et al., 2006)

Endogenous growth theories and augmented Solow growth theories have emphasized the importance of education in determining sustainable economic growth. In the world’s economy, some nation’s income and wealthiness are greater than other nations. Education proved itself to be main source in this regard. (Afzal, 2011)

The literature about education investment and economic growth identifies two ways of this investment for economic growth contributions. First, human capital can directly participate in production as a productive factor. In this way, human capital would generate the growth of output. This is so-called level effect. Second, human

capital can attribute to raising technical progress because of the education eases the information, diffusion and adoption of new technologies. This effect is so-called rate effect. (Freire-Serén, 2001)

Many researchers mention about the role that is played by education for economic and social development of countries. A nation's human capitals are the basic factor that shows the process and character of its economic and social development. Most of the developing countries believe in that the rapid increment in the educational opportunities is significant for economic development. Such the theorists of human capital as Schultz, Mincer, Becker, Denison, Harbison, and Myers researched the link between education and economic growth. Education, for them, led to increase productivity in boosting the stock of a person's human capital. The development economists adopted a thought in 1960 and 1970's about education was an element of investment. In the national plans during these years, there were some sentences or clauses about education was important because it got necessary skills for development. By the idea that set the link between education and economy, such organizations as the World Bank focused in 1980's on education that accelerated economic growth. (Ozsoy, 2008) There are other studies about economic growth and education in the literature (Uzawa, 1965; Lucas, 1988; Romer, 1986, 1990; Barro, 1991; Barro ve Lee, 1993, 1994; Barro and Sala-i Martin, 1995). According to Lucas (1998) the sustained economic growth is because of the accumulation of human capital, and education is the main tool for human capital accumulates. The human accumulation rate depends on the time spent on education. According to Romer (1986,1990) economic growth depends on existing human capital, which generates innovations. (Sarı and Soytaş, 2006) The theoretical developments between human capital and economic growth now are mainly treated under the framework of the models of Lucas (1998), Romer (1990), and Mankiw and et al. (1992). The first two are the internal growth models, and the other is the external growth model. In the model of Mankiw and et al. (1992), it is witnessed that human capital is added into function of production as an external variable, and in this way, the model of Solow is broadened. (Cetin and Ecevit, 2010)

The quality of education is one of the basic attitudes of economic development rather than the existence of education. The factors constituting the quality of education are to form strategy and policies that are designed for providing the performance of education effectively and efficiently and in using technological innovations to activate the process of education. Because human capital appears depending on education, such indicators as average study period, rate of schooling, rate of literacy, rate of higher education institutions, educational expenditures, and number of scientific publications show the indicators that indicate potentiality of human capital depending on education. (Tiryakioğlu, 2008) Nevertheless, for a strong structure of human capital, the variable of educational expenditures is significant. (Pamuk and Bektas, 2014) In most of the quantitative studies about the return of education on economic growth (Barro 1991, Barro and Salai-i-i Martin 1995, Hall and Jones 1999, OECD/UNESCO 2002, Temple 1999, Griliches 1996, Bils and Klenow 2000, Olaniyan and Okemakinde 2008), it appears a positive relationship between education and economic growth. (Wigley and Akkoyunlu, 2011) Other many studies incline toward finding the relationship between education and economic growth. (Sarıaslan, 1978)

3.2.2. Education and Economic Development

The contribution of human capital to economic development is to enable to put forward human capital with different indicators while countries increase their investments on human capital and in comparing it among countries. This opportunity is usually measured by the indexes that show the variables of level of education and health standards, and the level of development in the economy literature for a country. (Karatas and Cankaya, 2010)

The problem of development rises to prominence because of the necessity of getting the highest level of production in order to use scarce resources rationally and providing the structural changes in the fields of economy, society, politics, and culture. The reduction of development and underdevelopment problems is dependent on the quantitative and qualitative situations of physical (material) and personal (human) resources in economies. Particularly, in the inclusion of physical resources into economic process in appraisals, human factor has an important function. Because it will play a role to perform the development.(Tunc, 1998) This role is provided by the force of learned-community and skilled-person. In order to raise awareness in person who is the mind of development, it should be equipped with the desire of researching, working/studying, learning, and thinking. These are possible only with education. (Turkoglu,1994)

In the traditional development models, it is expressed development not to be possible without education. (Ergun, 2011) Development triangle shows that governmental bodies, educational institutions and transnational corporations are the dominant players in this triangle. Each having distinctive roles and various degree of

freedom. (Lundahl and Ndulu, 2008)

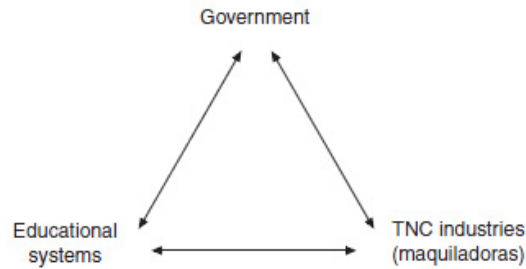


Fig. 3. Development Triangle, Hanson,2008, p.22.

The contribution of investments on human capital to economic development increases in parallel to the increment of importance in knowledge for the process of production. The returns of these investments are calculated higher than the returns of physical capital investments especially in the developing countries. *E.g.*, in a study that the resources of Brazil’s growth in 1970 and 1980’s were researched, it was found that technological development and human capital had higher contributions than physical capital and labor. The resources of growth realizing were found in these percentages: Physical Capital: 19%, Labor: 1,8%, Human Capital: 24%, and Technological Development: 40%. (Kasliwal, 1995, cited from Yumusak and Kar, 2000)

Additionally, education plays a balancing role to provide development, which is common efforts and hopes of countries, and to distribute national incomes in leveling the social layers in the low-income group up to the high-income levels in favor of the developed and developing countries in the first. (Turkmen, 2002)

Moreover, earnings from work increase with economic development, and the benefits associated with jobs improve as well. The relationship is not mechanical, but growth is clearly good for jobs. (The World Bank, 2012) (Figure 4)

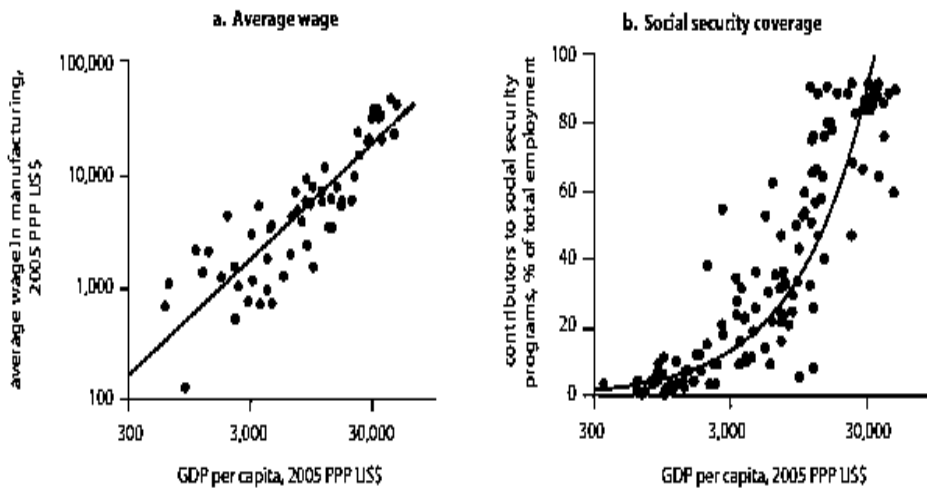


Fig. 4. Jobs Provide Higher Earnings and Benefits As Countries Grow, World Developments Reports 2013, p.9.

Because education has an important role in sustainable development, programmes constituting good-quality education and developing actual strategies. Should be applied in every field of education to support it (Ergun, 2011).

Conclusion And Suggestion

Education, as an investment on human capital, is important for the developed and developing countries. The significance of education in the information age directs these countries to investments. The interest starts to appear

in the world economy after 1950's significantly. It is seen that all factors in economy are an inseparable whole, while examining the necessity of education to develop human force within micro and macro analyses. Investments on education affect personal and social benefits more quickly. It should be organized educational systems to string along with rapid changes appearing with information society in the world and in putting them in a modern level.

References

- Acar, Y., (2002), İktisadi Buyume ve Buyume Modelleri, Uludag Üniversitesi Guclendirme Vakıfı Yayın No:191, VIPAS A.S., Yayın No:67.
- Afzal, M., (2011), "Microeconomic Analysis of Private Returns to Education and Determinants of Earnings", Pakistan Economic and Social Review, Volume:49, No:1.
- Aktan, C. C., <http://www.canaktan.org/egitim/universite-reform/bilgi-toplum.htm>, (Accessed: 20.02.2014)
- Aydın, B., (2003), "Bilgi Toplumu Olusumunda Bireylerin Yetistirilmesi ve Matematik Öğretimi", Pamukkale Üniversitesi Eğitim Fakültesi Dergisi, Sayı:14.
- Bakis, O., (2012), Türkiye'de Eğitimin Bireysel Getirisi, 1988-2008, Rekabet Forumu, Notlar, TUSIAD.
- Bal, O., (2011), "Beseri Sermaye ve Ekonomik Gelisme", Uluslararası Bilgi, Ekonomi ve Yönetim Kongresi.
- Berberoglu, B., (2010), "Bilgi Toplumu ve Bilgi Ekonomisi Olusturma Yolunda Türkiye ve Avrupa Birliği", Marmara Üniversitesi, I.I.B.F. Dergisi, Cilt XXIX, Sayı II.
- Cakmak, O., (2008), "Eğitimin Ekonomiye ve Kalkınmaya Etkisi, D.U. Ziya Gökalp Eğitim Fakültesi Dergisi 11.
- Caliskan, S., (2007), "Eğitimin Getirisi", Suleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi, C.12, S.2.
- Caliskan, S., (2007), "Eğitim-İssizlik ve Yoksulluk İlişkisi", SU İİBF Sosyal ve Ekonomik Araştırmalar Dergisi.
- Cetin, M. and Ecevit, E., (2010), Sağlık Harcamalarının Ekonomik Buyume Uzerindeki Etkisi: OECD Ülkeleri Uzerine Bir Panel Regresyon Analizi, Doğuş Üniversitesi Dergisi, 11 (2).
- Colak, M., (2010), "Eğitim ve Beşeri Sermayenin Kalkınma Üzerine Etkisi", Kamu-İş, C:11,S:3.
- Cukurcayir, M. A. and Çelebi, E., (2009), "Bilgi Toplumu ve E-Devletleşme Surecinde Türkiye", ZKU Sosyal Bilimler Dergisi, Cilt 5, Sayı 9.
- Dikkaya, M., Ö., D., (2006), "Kureselleşme ve Bilgi Toplumu: Eğitimin Kureselleşmesi ve Neo-Liberal Politikaların Etkileri", *Uluslararası İlişkiler*, Cilt 3, Sayı 9.
- Dogan, S. and Sanlı, B., (2003), "İktisadi Kalkınmada Beseri Sermaye", Suleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi, C.8, S.1.
- Eğitim İzleme Raporu (2011), Eğitim Cıktıları: Eğitimin Getirilerine İlişkin Kavramsal Çerçeve ve Alanyazın Taraması. http://erg.sabanciuniv.edu/sites/erg.sabanciuniv.edu/files/EIR2011.EgitiminCıktıları_0.pdf, (Accessed: 20.02.2014)
- Emiroglu, B. G., (2007), "Türkiye ve Dünya'da Bilgi Toplumu ve Ekonomisi: Sureçler ve Degisimler", XII. Türkiye'de İnternet Konferansı 8-10 Kasım , Ankara.
- Ergün, M., Felsefe Giriş (Bilim Felsefesi), <http://www.egitim.aku.edu.tr/bilimfelsefesi.pdf>, (Accessed: 22.02.2014)
- Ergün, M., (2011), Eğitim ve Kalkınma, 3.Sosyal Bilimler Sempozyumu. "*Bölgesel Kalkınmada Eğitimin Rolü*" <http://www.egitim.aku.edu.tr/bilimfelsefesi.pdf>, (Accessed: 05.02.2014)
- Eser, K. and Gokmen, Ç. E., (2009), "Beseri Sermayenin Ekonomik Gelisme Uzerindeki Etkileri: Dünya Deneyimi ve Türkiye Uzerine Gozlemler", Sosyal ve Beseri Bilimler Dergisi, Cilt 1, Sayı 2.
- Genc, S. Z., (2000), "Bilgi Toplumunda Öğretmen Eğitimi", Kuram ve Uygulamada Eğitim Yönetimi, Eğitim Yönetimi Dergisi.
- Golpek, F., (2012), "Eğitim Getirilerinin Özel ve Sosyal Acıdan İncelenmesi", Afyon Kocatepe Üniversitesi İktisadi ve İdari Bilimler Dergisi, Cilt:14, Sayı:1. http://www.iibfdergi.aku.edu.tr/pdf/14_1/3.pdf, (Accessed: 18.02.2014)
- Hesapcioglu, M., (1992), "Kamu Kesiminin Eğitim Harcamalarının Analizi", Maliye Dergisi, Sayı:149, Ankara.
- Hobikoglu, E.H., <http://www.iav.org.tr/dosyalar/B%C4%B0LG%C4%B0%20TOPLUMUNDA%20%C4%B0NOVASYON%20TEML%20G%C3%96STERGELER%C4%B0.docx>, (Accessed: 27.02.2014)
- Karatas, M. and Çankaya, E., (2010), "İktisadi Kalkınma Surecinde Beseri Sermayeye İlişkin Bir İnceleme", Mehmet Akif Ersoy Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, Yıl:2, Sayı:3.
- Kavak, Y., (1997), "Eğitim, İstihdam ve İşsizlik İlişkileri", Hacettepe Üniversitesi Eğitim Fakültesi Dergisi 13.
- Kunduracı, N. F., (2009), "Yoksullukla Mücadele-Beşeri Sermaye İlişkisi", T.C. Başbakanlık Sosyal Yardımlaşma ve Dayanışma Genel Müdürlüğü.
- Kibritcioglu, A., (1998), "İktisadi Buyumenin Belirleyicileri ve Yeni Buyume Modellerinde Beseri Sermayenin Yeri", AÜ Siyasal Bilgiler Fakültesi Dergisi, Ocak-Aralık 1998, Cilt:53, No.1-4.
- Lundahl, M. and Ndulu, B., (2008), "New Directions in Development Economics", Economic Development, Education and Transnational Corporations, Routledge Studies in Development Economics.
- Michaelowa, K., (2000), Returns to Education in Low Income Countries: Evidence for Africa, Committee on Developing Countries of the German Economic Association, <http://www1.aucegypt.edu/src/skillsdevelopment/pdfs/returns%20to%20education%20low%20income%20countries.pdf>, (Accessed: 07.03.2014)
- Mincer, J., (1991), Education and Unemployment, NBER Working Paper Series, Working Paper No:3838.
- Ozsoy, C., (2008), "Türk Yükseköğretim Sisteminin Durumu ve İktisadi Buyume Performansına Katkısı", Nigde Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, Aralık, Cilt:1, Sayı:2.
- Ozsoy C., (2009), "Türkiye'de Eğitim ve İktisadi Buyume Arasındaki İlişkinin Var Modeli ile Analizi", The Journal of Knowledge Economy & Knowledge Management, Volume IV Spring.
- Ozsoy, C. and Sürmeli A., (2012), "Eğitim Yatırımlarının Getirisi: Anadolu Üniversitesinin Sosyal Bilimler Alanında Eğitim Veren Fakülte Mezunlarına Yönelik Bir Araştırma", Anadolu Üniversitesi Sosyal Bilimler Dergisi, Cilt:12, Sayı:2.
- Pamuk, M. and Bektas, H., (2014), "Türkiye'de Eğitim Harcamaları ve Ekonomik Büyüme Arasındaki İlişki: ARDL Sınır Testi Yaklaşımı", Siyaset, Ekonomi ve Yönetim Araştırmaları Dergisi, Yıl:2, Cilt:2, Sayı:2.
- Psacharopoulos, G. and Patrions H. A., (2002), Returns to Investment in Education: A Further Update, "World Bank Policy Research Working Paper, No: 2881, September.
- Sari R. and Soytaş U., (2006), Income and Education in Turkey: A Multivariate Analysis, Education Economics, 14:2, 181-196.

- Sariaslan, H., (1978), “Ekonomik Büyüme ve Eğitim”, Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi, Cilt:11, Sayı:1.
- Savas, V., (1979), *Kalkınma Ekonomisi*, 2. Baskı. İstanbul: İTİA Nihad Sayer Yayın ve Yardım Vakfı Yayınları.
- Freire-Serén, M. J., (2001), “Human Capital Accumulation and Economic Growth”, *Investigaciones Economicas*, Vol. XXV (3).
- Saygılı, S., Cihan, C. and Zafer A. Y., (2005), “Eğitim ve Büyüme”, Türkiye İcin Sürdürülebilir Büyüme Stratejileri Konferansı, Tartışma Tebliğleri, TUSIAD.
- Schultz, T. W. (1968). “Education and Economic Growth: Return to Education”, *Readings in the Economics of Education*, UNESCO.
- Sharpe, A., (2001), “The Development of Indicators for Human Capital Sustainability”, Centre for the Study of Living Standards, CSLS session “The Development of Indicators for Human Capital Sustainability”, Canadian Economics Association, McGillUniversity, Montreal.
- Sianesi, B. and Reenen, J. V., (2003), “The Returns to Education: Macroeconomics”, *Journal of Economic Surveys* Vol.17, No:2.
- Stark, A., (2007), “Which Fields Pay, Which Fields Don’t? An Examination of the Returns to University Education in Canada by Detailed Field of Study”, <http://www.fin.gc.ca/pub/pdfs/wp2007-03e.pdf>, (Accessed: 12.02.2014)
- Simsek, M. and Kadılar, C., (2010), Türkiye’de Beşeri Sermaye, İhracat ve Ekonomik Büyüme Arasındaki İlişkinin Nedensellik Analizi”, C.Ü. İktisadi ve İdari Bilimler Dergisi, Cilt:11, Sayı 1.
- Taş, U. and Yenilmez, F.,(2009), “Türkiye’de Eğitimin Kalkınma Üzerindeki Rolü ve Eğitim Yatırımlarının Geri Donus Oranı”, Eskisehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi, 9(1).
- The World Bank, (2012), The World Development Report 2013 Jobs, http://siteresources.worldbank.org/EXTNWDR2013/Resources/8258024-1320950747192/8260293-1322665883147/WDR_2013_Report.pdf, (Accessed: 25.02.2014)
- Tiryakioğlu, M., (2008), “Gelişmekte Olan Ülkelerin Çıkmazı: Beşeri Sermaye Yoksulluğu”, Ege Akademik Bakış 8(1).
- Tunc, M., (1998), “Kalkınmada İnsan Sermayesi: İç Getiri Oranı Yaklaşımı ve Türkiye Uygulaması”, D.E.Ü.İ.İ.B.F. Dergisi, Cilt:13, Sayı:1.
- Türkmen, F., (2002), “Eğitimin Ekonomik ve Sosyal Faydaları ve Türkiye’de Eğitim Ekonomik Büyüme İlişkinin Arastırılması”, DPT-Uzmanlık Tezleri, Yayın No: DPT:2655.
- Türkoglu, A., (1994), Üretimde ve Tüketimde İnsan Faktörünün Önemi, Turk Milli Eğitiminde Kalite Paneline Adana’da Sunulan Tebliğler, Standard Ekonomik ve Teknik Dergi, Yıl:33, Sayı:338.
- Venniker, R., (2001), Social Returns to Education: A survey of Recent Literature on Human Capital Externalities, CPB Report, http://www.jstor.org/stable/2138769?origin=JSTOR-pdf&__redirected, (Accessed: 05.03.2014)
- Woodhall, M., (1987), (Ed. G. Psacharopoulos), “Earnings and Education”, *Economics of Education: Research and Studies*, Oxford: Pergamon Press.
- Wigley, A. A. and Akkoyunlu, B.,(2011), “Türkiye’de Eğitimin Degerinin Olculmesi”, Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, (H.U. Journal of Education) 40.
- Yumusak, I. G., (2009), Kadın Eğitiminin İktisadi Analizi, Nobel Yayınevi, Ankara.
- Yumusak, I. G. and Kar, A., (2000), Nüfus Artış Hızının Düşürülmesi İktisadi Kalkınmayı Arttırır mı?, Kocaeli Üniversitesi Sosyal Bilimler Dergisi, 1, 97-104.