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HIGHER EDUCATION VERSUS COMPETITIVENESS ON LABOUR MARKET

Abstract

The present paper raises the problem of costs that society incurs on education (higher education in particular) and social effects brought about by higher education. It is aimed at estimating the costs incurred by Polish society compared to other EU Member States and OECD as well as determining social effects resulting from the increase in educational level (on the basis of the literature of the subject). The latter objective is supposed to verify a thesis according to which the fact that society incurs the expenditure on higher education is justified.

Key words: social costs of higher education, social effects of education, external effects of education

Introduction

The analysis of costs and effects of education (and hence the profitability of education) has been carried out since the second half of the 20th century and particularly in the 1960's and the 1970's (Denison 1962; Harbison, Myers 1964; Schultz 1971), and then at the turn of the 20th and 21st centuries (among others: Psacharopoulos 1995; Saxton 2000; Pritchett 2001, Kirchner 2007, Rogers 2008). This investigation was supposed to indicate that investment in education was profitable both to particular persons investing in their education as well as to firms and a country. In this sense, the article was aimed at showing that all these parties should be interested in as good effects brought about by the expenditure on education as possible.

Effects of education have both notable or financial dimension in the form of a certain amount of wage/salary, stable employment, results of the functioning of a firm and economic growth, as well as non-financial or, say, social dimension reflected in satisfaction with job and life, development of democracy, physical state, etc. Similarly, costs of education can also have financial dimension in the form of the expenditure on tuition fees, textbooks, courses, and with reference to the entire society – payment of scholarships, salaries received by lecturers, maintenance and development of university infrastructure, etc. and also non-financial or partly financial, namely time devoted to education, giving up investments in alternative goods, etc. (see e.g. Bundesministerium fuer Bildung und Forschung 2007, 24). The present article raises issues relating to social costs, i.e. costs incurred by society as well as social effects (results) of investments made in higher education that are beneficial for society due to the increase in educational level.

It is worth stressing that the analysis of costs and effects of education can be carried out with reference to a particular person and also with respect to society. A situation in which the total cost of education is borne by an individual is not observed in any country. A considerable part of costs is incurred from the budget, yet major differences are found in particular countries. As country pays high costs connected with education, it should be

concerned with the effectiveness of such an investment. At the same time, it is worth emphasizing that financial resources are generated from taxes paid by the entire society.

Having borne the above in mind, the present paper is aimed at defining the type of social costs and effects connected with higher education and determining these costs in Poland compared to other countries. The other objective will be the verification of thesis according to which the fact that the society incurs the expenditure on higher education is justified.

In order to meet the objectives established, social costs of education are going to be presented in the form of budget expenditure on education and higher education (on the basis of data derived from Central Statistical Office of Poland and Eurostat). Then, synthetic results of the research on social effects will be presented (on the basis of the literature on the subject). At the same time, it will be assumed that social effects are equated with external effects of education¹.

Social costs of education

Education of individual persons brings about, among other things, external effects that are positive as a rule. These effects refer to third party and hence it may be suggested that other persons participate in the financing of education, e.g. through paying taxes (Wolter, Weber 2005, 40).

While examining the expenditure on higher education, it is worth analyzing the budget expenditure on education (in general) first because entering higher education is determined by the expenditure on education at other levels to some extent as well (Table 1).

Table 1. Budget expenditure on education in % of GDP

YEAR	1995	2000	2005	Percentage change 2005/1995
COUNTRY/ REGION				
European Union (25)	-	4.7	5.1	-
Belgium	-	-	6.0	-
Czech Republic	-	4.0	4.4	-
Denmark	7.7	8.3	8.3	7.8
Germany	4.6	4.5	4.5	-2.2
Estonia	5.9	5.6	5.0	-15.2
Greece	2.9	3.7	4.0	27.6
Spain	4.7	4.3	4.2	-10.6
France	6.0	5.8	5.7	-5.0
Ireland	5.1	4.3	4.8	-5.9
Italy	4.9	4.5	4.4	-10.2
Cyprus	4.6	5.4	6.9	50.0
Latvia	6.2	5.6	5.0	-19.4
Lithuania	5.1	5.6	5.0	-2.0
Hungary	5.4	4.5	5.5	1.9
Malta	-	4.5	2.9	-

¹ In the literature on the subject, "external effects" is a term that is used more often, and – as it could be noticed – it refers mainly to the influence of education on economic growth. Seldom does one come across references to other external effects. However, as the number of these effects is large and they refer to the functioning of society (e.g. decrease in crime level observed along with increase in educational level), it has been assumed that external effects are equated with social effects. It should be added that the present article puts not so considerable emphasis on the analysis of relationship between education and economic growth (as it is usually done while analyzing the effects of education).

Holland	5.1	4.9	5.2	2.0
Austria	6.0	5.7	5.4	10.0
Poland	5.1	4.9	5.5	7.8
Portugal	5.4	5.4	5.4	0.0
Slovakia	5.0	4.2	3.9	22.0
Finland	6.9	6.1	6.3	-8.7
Sweden	7.2	7.3	7.0	2.8
Great Britain	5.0	4.6	5.5	10.0
Iceland	4.9	5.9	7.5	53.1
Norway	7.4	6.8	7.0	-5.7
Switzerland	-	-	5.7	-
Bulgaria	3.4	4.2	4.5	32.4
Romania	-	2.9	3.5	-
Turkey	2.4	3.5	4.1	70.8
United States	4.6	4.9	4.9	6.5
Japan	3.2	3.8	3.5	9.4

Source: Eurostat, *Bildungsfinanzindikatoren*

http://europa.eu.int/comm/eurostat/newcronos/reference/display.do?screen=welcomeref&open=/popul/edtr/educ/finance&language=de&product=EU_population_social_conditions&root=EU_population_social_conditions&scrollto=304

Budget expenditure on education, expressed in GDP percentage (Table 1), amounts to c.a. 5% and displays a slightly upward tendency in the EU-25 Member States. In 2005 the highest expenditure (taken OECD countries into account as well) was reported in Scandinavian countries, namely Denmark (8.3%), Iceland (7.5%), Sweden and Norway (7.0% and 7.0% respectively), whereas the lowest expenditure was recorded in Malta (2.9%), Romania and Japan (3.5% in each case) as well as in Slovakia (3.9%). In Poland, this expenditure amounted to 5.5% and exceeded the EU average.

If the expenditure on education is regarded as GDP percentage, it could be noticed (Table 1) that in about half of the aforementioned countries in the period 1995-2005 the expenditure was subject to increase whereas as for the other half – it decreased. The greatest increase in the expenditure on education was observed in Turkey, Iceland, Cyprus, Bulgaria and Greece, whereas the largest decrease was reported in Latvia, Estonia, Spain and Italy.

Table 2 shows budget expenditure incurred on higher education in the period 1995-2005.

Table 2. Budget expenditure on higher education (ISCED 97, level 5-6) in % of GDP

COUNTRY/ REGION \ YEAR	1995	2000	2005
European Union (25)	-	1.0	1.2
Old European Union (15)	-	1.1	1.1
New EU Member States (10)	-	0.8	-
Belgium		1.3	1.3
Czech Republic	1.0	0.8	0.9
Denmark	1.6	2.5	2.4
Germany	1.1	1.1	1.1
Estonia		1.1	0.9
Greece	0.8	0.9	1.4
Spain	1.0	1.0	1.0
France	1.1	1.0	1.2
Ireland	1.3	1.3	1.1

Italy	0.8	0.8	0.8
Cyprus	-	1.0	1.6
Latvia	-	0.9	0.9
Lithuania		1.0	1.0
Hungary	1.0	1.0	1.0
Malta	-	0.8	0.5
Holland	1.4	1.3	1.4
Austria	1.2	1.3	1.5
Poland	0.9	0.8	1.2
Portugal	0.9	1.0	1.0
Slovakia	0.8	0.7	0.8
Finland	1.9	2.0	2.0
Sweden	1.6	2.0	1.9
Great Britain	1.2	0.8	1.2
Iceland	-	1.1	1.4
Norway	1.7	1.7	2.3
Switzerland	-	-	1.5
Bulgaria	-	0.9	4.5
Romania	-	0.4	0.8
Turkey	1.2	1.1	1.1
United States	-	1.2	1.3
Japan	-	0.6	0.6

Source: Eurostat, *Bildungsfinanzindikatoren*

http://europa.eu.int/comm/eurostat/newcronos/reference/display.do?screen=welcomeref&open=/popul/edtr/educ/finance&language=de&product=EU_population_social_conditions&root=EU_population_social_conditions&scrollto=304, OECD (www.oecd.org/edu/eag/2004), (www.oecd.org/edu/eag/2007), Statistical Yearbook 2002

Budget expenditure on higher education itself (ISCED 97, level 5-6) amounted to c.a. 1.2% of GDP in EU. In 2005, the highest expenditure was incurred in Bulgaria (4.5%), Denmark (2.4%), Norway (2.3%), Finland (2.0%) and Sweden (1.9%), and hence it could be noticed that the highest social costs² were incurred by Scandinavian countries. The lowest expenditure on higher education was incurred in Malta (0.5% of GDP), Japan (0.6%), Romania, Italy and Slovakia (0.8% in each case). In Poland, this expenditure amounted to 1.2% of GDP, i.e. as many as the EU average. Yet, it should be stressed that the percentage of students is higher in Poland compared to EU. Therefore, it is worth analyzing the expenditure per students (Table 3).

Access to education (and particularly higher education) may be a social problem faced by poor countries in particular. It may turn out that a number of able persons do not study because of financial matters. In order to avoid such a situation, country supports students financially via scholarships, subsidies to student hostels and lodgings, canteens, tickets, etc. Table 3 presents statistics showing financial aid that students are provided with in the percentage of the expenditure on higher education. The analysis of data will allow to draw conclusions about, among other things, the policy pursued by a country in the scope of offering equal opportunities in the market of higher education and providing able persons with possibility of entering this educational level.

² The character of which is entirely investment.

Table 3. Budget expenditure per student by the parity of purchasing power (Euro) and financial aid received by students as a percentage of budget expenditure on higher education (the year 2005)

SPECIFICATION COUNTRY/ REGION	Budget expenditure per student by the parity of purchasing power (Euro)	Financial aid received by students in the total expenditure on higher education (%)
European Union (25)	8377.7	16.0
Belgium	9765.8	15.8
Czech Republic	4842.9	5.8
Denmark	12654.4	30.8
Germany	10805.7	17.0
Greece	5185.9	5.2
Spain	8842.8	8.2
France	9472.5	7.9
Ireland	9311.8	14.8
Italy	6789.6	16.8
Cyprus	17329.2	57.6
Latvia	2484.1	15.2
Lithuania	3847.3	17.0
Hungary	5926.3	15.7
Malta	3897.7	-
Holland	-	27.0
Austria	8431.5	16.8
Poland	5546.1	1.1
Portugal	7433.9	8.9
Slovakia	4892.5	10.7
Finland	10686.0	16.6
Sweden	13700.5	27.1
Great Britain	-	23.9
Iceland	6930.3	22.2
Norway	14440.9	42.6
Switzerland	18386.0	2.4
Bulgaria	3669.2	10.8
Romania	2695.6	7.2
Turkey	3767.4	19.3
United States	18799.7	23.5
Japan	18812.3	21.5

Source: Eurostat, *Bildungsfinanzindikatoren*

http://europa.eu.int/comm/eurostat/newcronos/reference/display.do?screen=welcomeref&open=/popul/edtr/educ/finance&language=de&product=EU_population_social_conditions&root=EU_population_social_conditions&scrollto=304

The highest expenditure per student, by the parity of purchasing power, amounted to nearly 8378 Euro in EU in 2005. Taken the countries under analysis into account, the highest expenditure is reported in Japan (over 18812 Euro), United States (nearly 18800 Euro), Switzerland (18380 Euro), Norway (nearly 14441 Euro) and Sweden (over 13700 Euro). By contrast, the lowest expenditure is incurred in Latvia (over 2484 Euro), Romania (nearly 2696 Euro), Bulgaria (over 3669 Euro), Turkey (over 3767 Euro) (Table 3). As far as Poland is concerned, this expenditure amounts to c.a. 5546 Euro, i.e. is much lower (about 50%) than the EU average.

The amount of funds allocated directly for aid that students are provided with is another important issue to be raised. This importance results from the fact that able but

impecunious persons are provided the possibility of entering higher education thanks to direct financial aid. On average, in EU this aid amounts to 16% of the total expenditure on higher education. The highest percentage of this expenditure is received by students in Cyprus (nearly 58%), Norway (nearly 43%), Denmark (nearly 31%), Holland (27%), Great Britain and the United States (nearly 24%), whereas the lowest percentage was reported in Poland (over 1%), Switzerland (over 2%), Greece (over 5%), the Czech Republic (nearly 6%) and Romania (over 7%). Hence, the percentage of the expenditure on higher education that is received directly by students is the lowest in Poland.

It is worth noticing that such insufficient budgetary funds for financial aid received by students and for higher education in general lead to the fact that higher education is financed by individuals in Poland to a larger extent in comparison with other countries. In this case, able but poor people may be confronted by a problem about financing their education. On the other hand, nearly 50% of recent secondary-school graduates enters higher education and thus households provide large funds for education, which should motivate students to study diligently and acquire abilities once in education, and teaching staff should be improving the quality of education all the time.

Finally, it ought to be added that social costs of education also include lost taxes that a person would pay if he/she did not study as well as losses resulting from the fact that this person does not work, which has an impact on lower GDP than possible. However, these quantities cannot be estimated.

Costs incurred on education bring about certain effects that have various character. These costs are going to be discussed in another section.

Social (external) effects of education

Society invests in education through financing schools, libraries, etc. from the budget and in turn, it is better educated, which provides additional benefits to the functioning of a country³. The most important benefit enjoyed by a country might be a greater productivity of employees which stems from investing in human capital. Admittedly, in the model of economic growth by Solow (Solow 1956, 64-94), technological progress was still treated as unexplained exogenous variable. However, in newest models, that are the extension of Solow's model, the accumulation of human capital has been taken into account (Mankiw, Romer, Weil 1992, 408-437) partly due to the research initiated by Denison (Denison 1962, see also Jarecki 2007, 23-30). This capital is created by education to a great extent and in elaborated Solow's models, the influence that education exerts on GDP is taken into consideration. Therefore, high educational level of society is an initial condition, though not satisfactory one, for economic growth, high employment, etc.

The first attempt to estimate the influence of education on economic growth was made as soon as in the 1960's (particularly by Denison 1962, Schultz 1971, Harbison, Myers 1964). Nevertheless, these estimates as well as conclusions drawn from the research did not allow to determine this influence. On the other hand, research conducted later on, particularly at the turn of the 20th and the 21st centuries, showed that increase in educational level did not have to affect economic growth in an explicitly positive way. Certain determinants are necessary so that human capital is used in a productive way. These determinants include a proper quality of social capital, effectively functioning institutional-governmental environment, corruption and migration figures (see e.g. Rogers 2008, 362-370, Pritchett 2001, 367-391). Not going into

³ However, it may happen that in some cases, these actions will not be favourable – e.g. robberies or murders planned in a better way may result from the fact that criminals are well educated (see: Klimczak 2003, 130). Similarly, economic growth will not always be a benefit, which is going to be discussed in the latter part of the present paper.

minor details⁴, it is worth pointing to macroeconomic research conducted in various scopes that allowed to notice many positive external effects of education that are more or less notable and do not refer to the question under discussion, namely the influence of education on economic growth.

Taken notable effects into consideration, country benefits from the fact that, apart from a positive influence on work output and competitiveness of the economy, well educated persons have higher earnings and, as a result, pay higher taxes (An, Haveman, Wolfe 1993, 195-208) as poverty level is lower among highly educated persons (see e.g. Gundlach, Pablo, Waisert 2001). The higher the educational level, the lower the unemployment rate.

Apart from these direct effects, there are also less notable effects that have a more qualitative character. According to Venniker (Venniker 2001, 48-49), the last-mentioned effects can be divided into three categories. The first one involves the influence of education on the increase in productivity not reflected in the growth of earnings that an individual has but bringing about greater work output in a certain sector of economy and hence growth in earnings in the entire sector. Secondly, increase in education level may lead to faster technological progress and innovativeness and hence to more considerable economic growth. Besides, higher quality of human capital, achieved thanks to education, might lead to the fact that real capital is used in a better way. Thirdly, increase in educational level influence greater activity in politics, the development of democracy, decrease in crime level, and political stability. Human rights are also protected to a larger extent in countries where the percentage of well educated persons is higher. Presenting the question in a synthetic way on the basis of the literature on the subject, positive external effects are as follows:

- the higher the educational level is, the greater the number of persons interested in science and research (Stoker, Streckeisen, Wolter 1998, 43),
- well educated persons more often own firms that employ other persons (including poorly educated persons) (Wolter 2001, 16), which leads to the improvement in a situation on the labour market,
- greater activity in social and political matters, thanks to which there are greater chances for the development of democracy (Stoker, Streckeisen, Wolter 1998, 43),
- positive relationship between education and health⁵ (Berger, Leigh 1989, 433-455). As a result, lower budget expenditure on health service will be needed,
- decrease in crime level due to which budget expenditure on security will be lower (cf. Chapman 2005, 7),
- influence on the development of culture (Schumann 2001, 32; see also: Johnstone 2004, 403),
- well educated persons may share broader knowledge with their children and education becomes a sort of habit (Pechar, Keber 1996, 50). This refers not only to educational level but also to the quality of knowledge acquired. Furthermore, there is a positive relationship between educational level of parents and the state of their children's health (see: Glewie 1999, 124-159),
- well educated persons, e.g. with higher education, are more innovative, particularly in the scope of new technologies, labour organization, adaptation of new technologies, computer programs, etc. (Bartel, Lichtenberg 1987, 1-11),
- well educated persons also have greater expectations about different aspects of life (quality of services, additional benefits, extra activity, etc.), which may have a positive influence on the competitiveness of firms (see: Hitzan, Paroush 1980, 547).

⁴ Soszyńska (Soszyńska 2008) has elaborated on this issue

⁵ This aspect is going to be raised while discussing individual effects of education

Summary

Having analyzed the costs of higher education incurred by society, it seems that in Poland, compared to other countries, insufficient budgetary funds are appropriated for higher education and the level of individual subsidies for students is particularly low. On the other hand, the analysis of the literature on the subject concerning social effects of education (higher education in particular) allows to verify the thesis formulated in a positive way. According to this thesis, the fact that society incurs the expenditure on education (higher education as well) is justified. However, this expenditure must be effective, i.e. really influence the growth in productivity and positive social behaviour. In this sense, it is difficult to suggest that a large group of society should enter higher education and have it financed from the budget, just as it currently takes place in Poland, in a situation when as many as 28% of workers from the occupational group *technicians and other middle staff* and 20% of *office workers* have received higher education, which does not seem necessary in many of these cases (<http://epp.eurostat.ec.europa.eu>). Having material aspect in mind, some graduates consider entering higher education non-profitable. Hence, despite many positive aspects connected with improving the educational level, it is worth emphasizing that in society there is always an optimum structure of demand for persons with certain educational levels and that it changes with time, and that there will always be demand for less educated persons. On the other hand, it is difficult to interfere in the willingness to study displayed by society. Nevertheless, greater attention should be paid to the quality of education and effectiveness of financial resources spent socially by taking the demand for specialists who have graduated in certain fields of study into account.

To end with, it can be stated that investing in education brings about not only economic effects (that are examined more often particularly in the context of the influence that educational level has on economic growth) but also social, sociological, political effects, etc. The effects of such an investment are beneficial not only to an individual but also to society itself. Social benefits presented, sometimes called external effects, are as a rule omitted in the research on the profitability of education due to problems with quantitative presentation.

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