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The paper aims at investigating the two main characteristics of a modern system of compulsory education with a focus on Romania. It assumes that the equity of the education sector and the efficiency of resource use are strongly correlated, both supporting the development of a knowledge - based society. The trade-off between equity and efficiency persists in the Romanian educational sector, since the opportunity cost of increased budgetary allotment for education is high for an developing country such as Romania; on the one hand, the efficiency of these allotments are very important for the economic growth, on the other hand, the government's compensatory actions to increase equity and equal opportunities are equally important.

Keywords: equality of opportunities, public education, efficiency indicators, equity indicators, compulsory education.

JEL Classification: H52, I21, I22, I28.

Theoretical background

Education has become one of the greatest resource consumers and one of the greatest industries in all economies, regardless of the level of development. Public expenditure allotted to education has increased twice or even three times in the 60s and 70s, along with a development in the economic literature on *human capital* and with Schultz's (60 and 61), Mincer's (58) and Becker's (75) famous contributions.

The beneficial contributions of education have been analysed along the years from various points of view: productivity growth, income growth of educated persons, decreasing social discrepancies, reducing disparities between the levels of development among countries. The orientation in recent studies is concerned not so much with proving the correlation between public allotment for education and the level of development, as with discussing issues connected to measuring the efficiency of these allotments, to the quality of education from the point of view of maximizing the results, as well as with issues related to the equity of the educational process and to equal opportunities in education. Both the concept of *efficiency* and that of *equality* are accompanied by many theoretical and political controversies.

Although misleadingly simple when considering the neoclassic cost-minimizing or result-maximizing model of analysis, the problem of the *efficiency* of education is a controversial one, given the different methodology used for the calculus of the social rate of return to investment in education.

The social rate of return, that compares the costs and benefits of education for the whole society, is used to ground and formulate the educational policies regarding the expansion of different levels and types of education. The social rate of return is difficult to calculate if we refer to it in terms of clear monetary profit to which the externalities owed to education are added (the externalities are effects of education on health, fertility, criminality and civil involvement). Including externalities or not in the calculus of the social rate of return to investment in education may lead to very different educational policies, since the social return rate can be larger or smaller than the private return rate¹¹³. In a poor country, for instance, the optimum number of

113 G. Psacharopoulos, H. A. Patrinos, Human capital and rates of return, in vol. edited by G. Johnes and J. Johnes International Handbook on the Economics of Education, Edward Elgar Publishing Ltd, UK, 2004, p. 25.

schooling years from the social point of view is smaller than the optimum number of schooling years from the private point of view if one ignores the fact that educated women have a lower degree of fertility, that is if one ignores an external profit owing to education. If externalities are taken into account for the calculus, the social rate of return is higher than the private rate of return, the result being a higher number of schooling years and hence different educational policies. The empirical analysis of this issue has proved to be extremely difficult, as measuring the externalities of education is one of the most laborious approaches that the economy of education and economics in general have had to face.

In order to avoid these methodological and empirical difficulties, other authors calculate the efficiency of education by using the concepts of educational *attainment* and outcome. Attainment can be defined as the number or proportion of school-age children that enter and complete primary or secondary school, or a particular grade¹¹⁴. This measure is superior to enrolment because it excludes students that drop out of school prematurely and the number of repeaters does not affect it. Attainment rates indirectly reflect high educational *quality*.

Being mainly concerned with increasing the level of compulsory education attendance and attainment, governments have gradually increased budget allotment for education, but the concern for what the students know, for their abilities and competences has been comparatively reduced. This is the reason why international standardized tests such as the PISA test, which reveals the competences in literature and mathematics, are lower by far in the emerging countries as compared to the developed countries. Current controversies regarding the increase in expenditure for education show that in order to reduce the differences in the level of development among countries, an increase in quantity regarding education - that is budget allotment - is no longer sufficient, but a rise in quality is needed. The latter implies structural changes in educational institutions¹¹⁵.

Equity has two basic meanings in the economic jargon: a horizontal and a vertical one. The horizontal one refers to the necessity of avoiding discrimination (in terms of gender, ethnic group or any other form) among individuals that are equal from a material point of view (they have identical results in economic terms). Vertical equity consists in reducing the economic differences among individuals. It is put into practice through the redistribution function of the state and implies the use of the public budget to redistribute income towards the underprivileged categories, either directly by transfer or by negative taxation or indirectly by providing free or subsidized goods or services.

The difficulty in choosing between educational policy programmes lies in that the term *correct* or *ethical* is fairly vague, subjective, various individuals will have different views on what is correct or not. Various individuals will benefit to various degrees from governmental programmes, but it is difficult to tell who will benefit from a certain programme - if anyone does. In order to have an even vague notion of this issue, we have to be able to answer the following question: *Who benefits* from a certain programme and *Who pays* for it, and *From what funds* respectively. Most programmes of public expenditure ground in the notion that in order to obtain a higher degree of equity, a certain rate of efficiency can be yielded. Most arguments regarding some programme or other refer not so much to the rate of efficiency that is given up for increased equity, as to the nature of the exchange and the consequences it has on the distributive situation, as quite often these results differ from the ones that have been anticipated.

Current economics literature underlines the necessity of taking into account more systematically the redistributive effects of the public services, since they are connected to the income indicators, in order to underline the manner in which the various public service programs can influence the

114 A. S. Rajkumar, V. Swaroop, Public spending and outcomes. Does Governance matter? Policy Research Working Paper n. 2840, World Bank, 2002, p.16.

115 Eric A. Hanushek, Ludger Wößmann, The Role of Education Quality in Economic Growth, Policy Research Working Paper n. 4122, World Bank, 2007, p.51.

achievement of social policy objectives. Nor is assessment of equity free from dangers and difficulties which are of an empiric and methodological nature. Extreme poverty can be assessed by using infant mortality rate, as this has an important impact on the rate of enrolment in primary education. Secondary education is influenced to a higher degree by another indicator, the Gini indicator of income distribution. Ensuring minimal – or compulsory – education for all citizens, irrespective of wealth distribution, is aimed at by putting into act the principles of equity. This type of research is the more important in Romania, where the objective of economic growth is of paramount importance, while, on the other hand, the arbitration among the various public programs is difficult as they directly influence social disparities.

Main findings

Quantity and quality of compulsory education in Romania

The educational policy in Romania is probably facing the greatest challenge ever. The critical issue of Romania’s active population (half of the active population migrates towards the EU countries in search for work), the international trends in research and education – emphasizing the role of knowledge and innovation, the international trends on the labour market and the human capital, the cultural disparity and the disparity in development comparative to other EU countries are some elements that can prompt the leaders to re-consider the role of education, to increase of the budget allotted to education, as well as an institutional reform meant to increase the overall quality of the educational system.

Table no. 1 shows that, compared with the European average, Romania allots education a far lower percentage of its GDP. The greatest discrepancy as compared to the European average is present in secondary education, where the need for financing is greater due to a higher rate in school-drop - as we will show in the paragraph devoted to the description of equity. To conclude, if an increase of the GDP is allotted to education, it should be done according to the specific needs of the various levels of education in order to increase their efficiency.

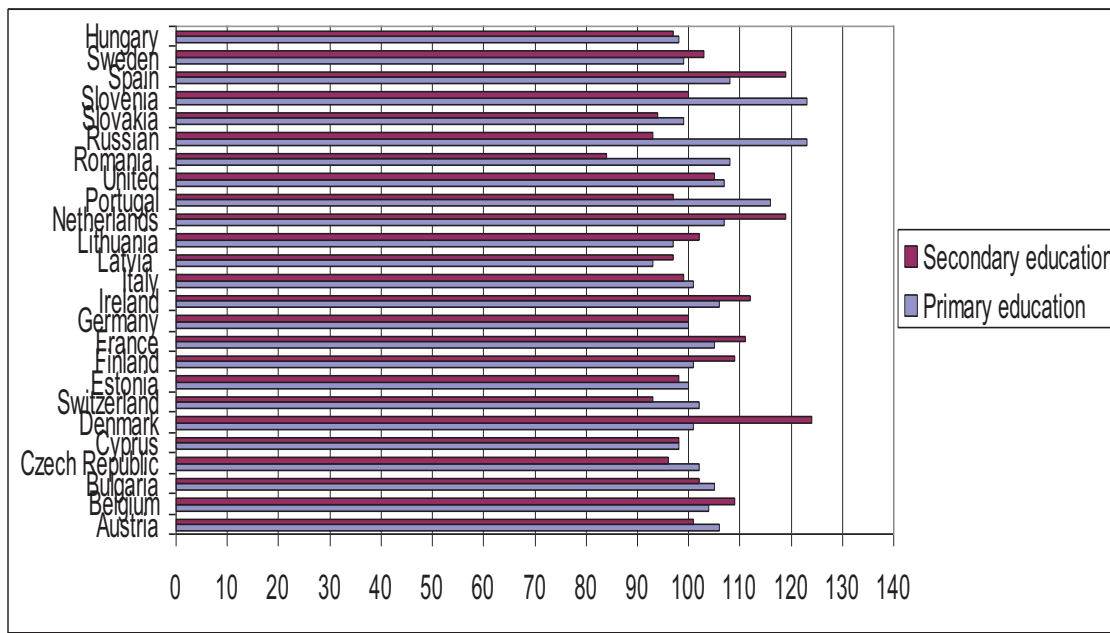
Table no. 1 Total public expenditure on education in EU and Romania

Indicators	EU	Romania
Total public expenditure on education as % of GDP, for all levels of education combined	5.07	3.29
Total public expenditure on education as % of GDP, at primary level of education (ISCED 1)	1.15	1.20
Total public expenditure on education as % of GDP, at secondary level of education (ISCED 2-4)	2.30	0.73
Total public expenditure on education as % of GDP, at tertiary level of education (ISCED 5-6)	1.13	0.70
Total public expenditure on education as % of GDP, at pre-primary level of education (ISCED 0) and not allocated by level	0.49	0.66

Source: Eurostat

By comparative analysis, Romania has the lowest enrolment rate in secondary education among the EU countries, as shown in Fig. 1

Figure no.1. Enrolment rate in the UE



Source: Romania's Yearbook, 2006, INS, Bucharest, 2007.

Romania's position, in relation to knowledge indicators, is not favourable, on the contrary. As we have shown in the first paragraph, one of the ways of emphasizing the efficiency of education is through *attainment* and *outcome*. *Attainment rate* shows the ratio of the population graduating from the various education levels as compared to the ratio of people enrolled. If in Romania the rate of enrolment is quite high - a national average 98.9% in the year 2005, it is only 66.5% of them who manage to graduate compulsory education, as compared to 77.3% which is the EU average. The specific indicators *results* of education in terms of acquired knowledge and skills do not place Romania in a competitive position within the EU, as 41% of the pupils do not manage to reach the lowest performance level in the PISA test as compared to a European average of 19.4%.

Equity in compulsory education in Romania

The general perception of the Romanian education system is that lately it has not been equitable, as it does not offer equal opportunities in spite the underprivileged groups support policies implemented and due to the fact that compulsory education is not actually free, although it is meant to be.

Two categories of pupils are particularly underprivileged: pupils from the rural areas and pupils belonging to the Roma ethnic group. At present, only 24.5% of the pupils from the rural areas manage to attend high school. The average drop-out rate in secondary education is 1.5 -1.7 % every year, but the drop-out rate in the rural areas is 1.6 – 2.1 %.

As far as secondary education is concerned, the cost of education – mainly connected to the cost of transportation – is very high, and the opportunity cost of education related to housework in the household is also very high. 41% of the **agricultural** households workers had a personal income under 119 ROL in 2006, when the personal income of 88% was under 336 ROL (the minimum pay was 330 ROL), while 74% of the **employees** had an average personal income of over 336 ROL when the average pay was 862 ROL. Very low income in the families of agricultural workers results in a very low rate of compulsory education graduation as compared to the national rate; at the same time, the lack of differentiated pay between teachers in the rural areas and urban areas respectively and the lack of incentives and protective policies for teachers and pupils from the rural areas causes poorer results in rural school as compared to the national

average. Thus, the rate of pupils from the rural areas who obtain good results in the national tests is 2-3 times lower than that of pupils in the urban areas.

As far as the Roma ethnic group is concerned, as many as 80% of the persons who do not attend school belong to this group, of which 38% are functionally illiterate. The rate of Roma children being enrolled in primary education is 64% as compared to the national rate of 98.9%¹¹⁶. Official statistics of average income in the Roma families or of gender differentiation are limited or not available. The problems that the Roma ethnic group are facing are major and persistent, as most of the Roma children come from families where parents are unemployed, living from begging or social benefits in unwholesome public housing.

Most developed European nations tend to have Gini coefficients between 0.24 and 0.36. In Romania the values of the Gini concentration coefficient for the years 2004, 2005 and 2006 ($i_{G\ 2004} = 0.355$; $i_{G\ 2005} = 0.375$; $i_{G\ 2006} = 0.359$) indicate a moderate concentration of total income per person for the years considered. Since the results are similar, we can conclude that no major changes in the distribution of total income per person have occurred in the country. The Gini coefficient can be used to indicate how the distribution of income has changed within a country over a period of time (2004-2006), thus it is possible to see if inequality is increasing or decreasing. The lack of data has prevented the calculation of a statistically significant correlation between the drop-put rate and the Gini coefficient for Romania.

Conclusion

Both equity and efficiency of the Romanian education sector will increase if the institutional efficiency of this sector increases. Institutional efficiency is corroborated with economic growth, while the quality of the educational institutions ensures the efficiency of extended budgetary allotment directed towards education. In a country such as Romania, where each percent of the GDP allotted to a certain section of the budget has a high opportunity cost, institutional quality is very important, since the actual efficiency of the various educational projects depend on it. That is why the so-much desired reform in the education sector will have to focus more on quality and not on quantity, on spending the money efficiently rather than increasing the allotted funds.

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¹¹⁶ Romania for education, Romania for research, Report of the Presidential Committee of Analysis and Elaboration of Educational and Research Policies, Bucharest, 2007, p. 8.