AN EDUCATION VOUCHER AS A WAY TO INCREASE COMPETITIVENESS IN UPPER SECONDARY SCHOOLS EDUCATIONAL SERVICES MARKET

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INTRODUCTION

Since 1989 in Poland, there has been a clear trend towards liberalisation of economic policy. Privatisation has occurred, with ownership changes aimed at minimising state property and maximising private property. However, this process is not complete, and many segments of the Polish market are still dominated by the public sector. One is the educational services market. While private institutions providing education do exist, their market share is marginal (approx. 11% of all students [Jeżowski 2014]) and the main service providers are local governments, which own most of the schools in Poland. However, given their current financial situation, many families would have no choice but to turn to the government to finance their children's education. A failure to do so would require them to withdraw their children from schools. Nonetheless, the question as to which of the forms of property in the market of educational services is better is one to consider.

At this point, the question is, who should decide this. The answer would seem simple – every enterprise works to satisfy consumers' needs to the greatest extent possible; so the consumer decides from whom to buy a product or service. In the educational services market, consumers are students, but the decisions are made for them by their legal guardians (usually their parents), so the most optimum system would seem to be one in which the state budget does not avoid the financing of education. Meanwhile, the decision as to which entity should provide educational services would belong to the parents. Such a system is implementable through the use of education vouchers.

AIM AND METHOD

The main goal of the article is to present educational vouchers as an alternative to the current method of financing education in Poland. The vouchers would allow individuals greater access to the educational services market. The article:

–   describes the current system of financing educational services in Poland;
–   seeks to determine the best way to implement educational vouchers;
–   proposes an algorithm for calculating the amount of the voucher.

The problem is considered from the perspective of local governments, which are responsible for providing access to educational service. It is therefore important that the new solution be possible to implement without changing the general law in Poland. It is also advisable that the reform should not cost local governments more money. To achieve these goals, descriptive analysis is used along with tabular and numerical examples. Legal acts and recent literature are the primary sources of information.

PUBLIC FINANCING CHARACTERISTICS OF EDUCATIONAL SERVICES IN POLAND – UPPER SECONDARY SCHOOLS

According to the Article 5, paragraph 5a of the Act of 7 September 1991 on education system (Journal of Laws of 1991 No 95, item 425, as amended) establishing and operating public upper secondary schools is the responsibility of the county. This means that financing education at the upper secondary level by the public sector, and issues attendant to it, are the responsibility of counties. Funds allocated by the counties for this purpose come in most from the educational part of the general subsidy paid to local governments by the state budget. The subsidy transfers funds from the state budget to local government budgets, which is a non-refundable, free, unconditional and objectively determined. Its purpose is to supplement the revenues of these budgets [Głuchowski 2001]. This definition suggests that the government may use funds from the grant in any way. The size of the subsidy is determined annually in the budget, but how it is divided is determined by the ordinance of the minister responsible for education (Journal of Laws of 2003 No 203, item 1966, as amended). Analysis of recent regulations on this issue shows that the amount of the subsidy that local governments receive depends on the number of students in the area (according to the principle "money follows the student") and the degree of professional advancement of the teachers working there. In brief, the subsidy for each local government is calculated as the product of the so-called financial standard (A) and the number of conversion students in the local government (Up_i) adjusted for weighting that recognises the professional advancement of teachers in the county (D_i).

Equations 1–6, presented below, have been prepared by the author, on the basis of the Ordinance of the Minister of Education of 15 December 2014 on the division of the educational part of the general subsidy for local governments in 2015 (Journal of Laws 2014, item 1977).

Equation 1. The algorithm for calculating the amount of the educational part of the general subsidy for local governments.

$$SO_i = Up_i \cdot A$$

The financial standard (A) is calculated according to the formula in Equation 2.

Equation 2. The algorithm for calculating the financial standard (A).

$$A = \frac{SO}{Up}$$

where:

SO – amount of the educational part of the general subsidy planned in the Budget Act for the year for all local governments;

Up – number of conversion students across the country.

As can be deduced from the formulas above, the A financial standard is the amount of the educational part of the general subsidy attributable to the so-called one conversion student. The amount of the subsidy which the local government receives depends on the number of conversion students in the local government, making it the most important value for the problem presented in the article. It is calculated as shown in Equation 3.

Equation 3. The algorithm for calculating the number of conversion students in each local government.

$$Up = \sum_{i=1}^{N} Up_i$$

$$Up_i = (Ur_i + Uu_i + Uz_i) \cdot D_i$$

where:

Ur_i – statistical number of students in the local government;

Uu_i – supplemental number of students in the basic school year in terms of school work;

Uz_i – conversion number of pupils or children and young people qualified in the base school year, in terms of extracurricular activities.

Source: the author, based on the Ordinance of the Minister of the Education of 15 December 2014…, op. cit.

The components of Equation 3 are calculated using the following formulas.

Equation 4. The algorithm for calculating the statistical number of students in the local government.

$$Ur_i = Sa_i + 0.7 \cdot Sb_i + 0.35 \cdot Sc_i + 0.5 \cdot Sd_i + 0.25 \cdot Se_i$$

where:

Sa_i – number of students of public and private schools for children and young people and students of teacher training colleges and social workers who provide education services full-time at the local government;

Sb_i – number of full-time students of public schools for adults, part-time students (or students sitting in or observing classes), and social workers training colleges who provide education services in evening courses or distance learning in the local government;

Sc_i – number of full-time students of private schools for adults in the local government;

Sd_i – number of part time students of public schools for adults in the local government;

Se_i – number of part time students of private schools for adults in the local government.

Equation 5. The algorithm for calculating the supplemental number of students.

$$Uu_i = P_1 \cdot N_{1,i} + P_2 \cdot N_{2,i} + \cdots + P_{33} \cdot N_{33,i}$$

signs:
P_1–P_{33} – weights for the numbers of students;
$N_{1,i}$–$N_{33,i}$ – numbers of students assigned to weights in the local government.

Table 1 shows the selected P_i values used to calculate the supplemental number of students in 2015.

TABLE 1. Selected values of weights used in the algorithm for the supplemental number of students to calculate the amount of the educational portion of the general subsidy in 2015

i value	P_i value	Students assigned to P_i value
4	1.40	– students who have mild mental retardation – socially maladjusted, behavioural disorders – risk of addiction, risk of social maladjustment, chronic diseases – requiring the use of special organisation of learning and working methods, and students of special primary schools, secondary schools, special schools in the special youth care centres and youth centres, social therapy – requiring special organisation of learning and working methods
6	3.60	students who are deaf, hard of hearing, or have moderate or severe intellectual disabilities
8	0.80	additionally for disabled students in integration classes in primary schools, secondary schools, upper secondary schools
9	0.082	students of upper secondary schools and art schools (excluding music schools)
14	0.40	students of classes at schools teaching in the national minority language or ethnic minority or regional language and students of classes at schools where educational activities are conducted in two languages: Polish and the minority language or regional language, which is the second language
15	0.20	students of sport classes
20	2.01	students of general music schools
22	0.92	students of art upper secondary schools
27	1.84	students of special extracurricular educational activities or educational groups conducted in primary schools, secondary schools and upper secondary schools – organised in medical facilities

Source: the author, based on Ordinance of the Minister of the Education of 15 December 2014…, op. cit.

Analysing the weights specified in the ordinance, it can be deduced that the higher values are assigned to students whose teaching requires more qualified staff (as in the case of students with intellectual disabilities), better equipment etc.

Algorithm for conversion number of pupils or children and young people qualified in the base school year in terms of extracurricular activities is presented in Equation 6.

Equation 6. The algorithm for calculating the conversion number of pupils or children and young people qualified in the base school year in terms of extracurricular activities.

$$Uz_i = P_{34} \cdot N_{34,i} + P_{35} \cdot N_{35,i} + \cdots + P_{47} \cdot N_{47,i}$$

where:
P_{34}–P_{47} – weights for the numbers of students;
$N_{34,i}$–$N_{47,i}$ – numbers of students assigned to weights in the local government.

Table 2 shows the selected P_i values used to calculate the conversion number of pupils or children and young people qualified in the base school year in the terms of extracurricular activities in 2015 and students assigned to them.

TABLE 2. Selected values of weights used in the algorithm for calculating the conversion number of pupils or children and young people qualified in the base school year in the terms of extracurricular activities in 2015

i value	P_i value	Students assigned to P_i value
35	1.50	students,who live in dormitories
36	0.50	additionally for students of special schools who live in dormitories
40	10.00	students of youth detention centres who are accomodated in the centres
41	1.50	students of social therapy centres who are not accomodated in the centres
43	0.02	students who benefit from school youth hostels according to the actual number of seats and the number of months of use

Source: the author, based on Ordinance of the Minister of Education of 15 December 2014…, op. cit.

The D_i ratio differentiates various local governments due to the professional advancement of teachers working there. It also takes into account the ratio of students living in villages below 5,000 inhabitants in the total number of students. Because it is of little relevance to the topic of the article, this ratio will be discussed no further here.

Analysing the algorithm for the amount of the educational portion of the general subsidy for local governments, it should be noted that it has been created with the notion that "money follows the student". That is, the subsidy is granted to local governments, depending on how many students are in their area. The extensive system of weights used to calculate the number of conversion students differentiates students according to the following factors: in which institution and in what form they take advantage of educational services (statistical number of students – Ur_i), the students' individual needs, their health status or type of service that they chose (supplementing number of students – Uu_i) and according to the additional public services available to have decent conditions for the use of educational services (conversion number of pupils – Uz_i). Ensuring that these questions can be answered is essential to the funding of these services, because it is related to the costs to be incurred in connection with the education of the student (and also has an impact on the price of educational services).

In the current system of financing education by the public sector, the money goes primarily to public institutions, as using the services of private schools is paid. This means parents who choose to have their children educated in private schools pay for educational services twice – the first time in taxes for public schools, which they do not use, and the other for the private school the child does attend. Access to the services of private institutions is severely limited for students from less affluent families. Consequently, the choice between public and private school is severely limited, which is a major flaw of the current system.

THE ESSENCE, ORIGINS, AND EXPECTED EFFECTS OF EDUCATION VOUCHERS

The concept of education vouchers was created in the 1960s by Milton Friedman, of the Chicago School of Economics fame. The goal was to create a kind of compromise between the socialist idea of redistribution of national income by running and financing schools by the public sector and the free market belief that competition is the best way to maximise management effectiveness. The idea of this compromise was to give consumers (parents) back the control over their money, either to keep it by sending their children to public schools, which were funded, or giving them the opportunity to spend money on purchasing the services of private institutions.

According to Friedman, to do this it was necessary to determine the amount of money the public sector can spend on funding education, estimate the cost of education for one student and allow parents to spend that money [Friedman and Friedman 1990]. Every parent would receive from the state a voucher that could be deposited in any school of their choice (either private and public). Friedman did not specify the algorithm to be used to determine the amount of education voucher, which is understandable, given that different countries have different funds and the educational services market in each of them has slightly different characteristics and processes. Consequently, in order to implement this idea, each country (or indeed any local government) should develop its own appropriate algorithm for estimating the amount of the voucher.

There are different types of education vouchers. In theory, there are several criteria [WWW1]:
1) the possible range of use for: limited vouchers (those that can only be used in public schools) and unlimited vouchers (those that can also be used in private schools);
2) the possibility of covering the difference between the value of the voucher and the price of educational services by parents for: supplementing vouchers (parents have the opportunity to pay the difference) and not supplementing vouchers (parents cannot pay the difference);
3) the value of the voucher: cost (cover all expenses for a child's education, regardless of the price of an educational service) and vouchers with a fixed value (the government covers the cost of education up to a certain amount);
4) the costs of transporting students to school: covering the expenses of transportation and those that do not cover this cost;

5) the income criterion for those dependent on income and those who are not;

6) the autonomy of schools with regard to the recruitment policy for: unconditional vouchers (giving students access to school, regardless of whether it is required to pass an entrance exam) and conditional vouchers (the student has to meet all the requirements).

Again, Friedman considered the education voucher as a way – or at least a partial one – to release the potential of the educational services market, which in turn would lead the United States out of crisis of the education system in the 1950s. The expected result would be increased private sector participation in the market and higher quality services. Paradoxically, this idea was criticised by liberal economists (in particular representatives of the Austrian school of economics). Murray Newton Rothbart believed that using vouchers could lead to nationalisation of the means allocated in education. Further, he warned, the consequence of such action could be to increase government control over private schools (which would have to meet certain conditions in order to receive the voucher) and even corrupt business education through political mechanisms [Rothbart 2004]. It is hard to disagree with this opinion. The aversion of liberal economists to the voucher, which does not break out of the public sector funding of education mold, and in the relationship between private schools and governments implements something of a public-private partnership, is understandable. Other proponents of economic liberalism spoke of the voucher as a manifestation of "educational socialism", which would imply, in fact, the nationalisation of private schools [Bielecki 2005]. Over time Friedman himself withdrew his support for the reform, recognising it as good only for a transitional system.

The direct control of the schools (in which the voucher is realised) by the public authorities is not the only solution proposed in the literature. There are also models based on the lack of these control facilities while the school meets the condition of employing teachers licensed by the government [West 1996]. However, the value of the measure as a transitional system should be appreciated. It is difficult to imagine the immediate privatisation of the education market with the simultaneous implementation of full payment for educational services in Poland. Such measures could destabilise the market (before the necessary adjustment processes have taken place) and lead to widespread public dissatisfaction (especially the poorer parts of society) in the short and even medium term. In such a situation, an education voucher would seem a much milder and less controversial temporary solution. It might be one of many appropriately synchronised reforms leading to market liberalisation in Poland and the completion of privatisation started in the 1990s. In the first phase it would be worthwhile to introduce a voucher for an upper secondary school level, because this is the moment when the student takes an initial decision as to which profession in the future he or she would like to pursue (by selecting the profile of classes in secondary, technical or vocational school). In this situation the private sector would have more opportunities to find a niche where it could specialise. Currently, there are such schools as the Non-public Upper Secondary School No 81 of the Warsaw School of Economics in Poland, which specialises in educating its students in economics and foreign languages [WWW 2].

PROPOSITION OF REFORM OF FINANCING EDUCATION IN POLAND

As already mentioned, in Poland the organisation and financing of education is the responsibility of local governments, while the role of the state budget is limited to determining the amount of the educational part of the general subsidy for local governments and paying it on their accounts. Therefore, the decision to implement an alternative method of distributing these funds (which is an education voucher) must be taken by the local government – in the case of upper secondary schools by the county. This means that the algorithm for calculating the amount of the voucher should also be determined by each government individually. At this point it is necessarily to determine what kind of voucher would be most appropriate for Polish local governments. Given the difficult situation of the public finance sector and related requirements for governments to progressively reduce their debt, it seems most appropriate the voucher would be the one with a fixed value that parents could supplement themselves (supplementing voucher). It is also an optimal solution for competitiveness in the market of educational services: On the one hand, schools that specialise in selected branches of science would bear various costs, which will affect the lower price of the service (lack of possibility of defining a uniform price). On the other hand, schools would be able to compete with each other in terms of price. Parents would be responsible for making an optimal choice between the quality of service and its price (which would involve greater or smaller surcharge). In addition, the voucher should be:
–   unlimited – results directly from the goal of the reform;
–   conditional – improving the quality of educational services in individual schools would be hindered if the school could not verify the knowledge and skills of students through entrance examinations;
–   independent of income – relating the possibility of receiving a voucher by a student with the income of his family would generate unnecessary proliferation of red tape, and consequently increase the cost of operating the solution. In addition, experience with implementing a voucher dependent on income in Cleveland, Ohio shows that vouchers in America go mainly to children from African-American families [Zimmer and Bettinger 2010]. Favouring certain social groups in this way may even lead to ostracism from the rest of society, which is undesirable.

The issue of using the voucher to also cover transport costs is somewhat resolved in the Ordinance of the Minister of the Education, where the algorithm determining the amount of the subsidy contains increased weight for students from villages of no more than 5,000 inhabitants (transporting students from these towns may actually generate additional costs). In other cases, each government should decide individually if the voucher should contain additional funding for transport students (taking into account the financial possibilities).

It is also necessary to propose an algorithm for calculating the amount of the voucher per student. Given the assumption that the reform should not generate additional expenditure for local governments, the most appropriate way would seem to be to find just the right way of distributing funds from subsidies (adding any additional measures that are already added by local governments to finance public schools). A useful algorithm may be found in the Ordinance of the Minister of Education, which should be only modified

in several places. It includes a quite detailed weighting system, which takes into account both the cost of transporting the student (as mentioned in the article) and the additional costs associated with his state of health etc. The only problem that has not been solved in this algorithm is to take into account the additional money from the other income of the local government. Equations 7 and 8, prepared by the author, present a possible algorithms for calculating the amount of the education voucher.

Equation 7. The proposed algorithm for calculating the amount of the education voucher.

$$K_j = Wp_j \cdot A_i$$

where:
K_j – amount of the education voucher for the student;
Wp_j – conversion factor for each student, which equals the sum of weightings assigned to the student meeting the conditions laid down in the Ordinance;
A_i – financial standard for the local government.

Equation 8. The proposed algorithm for the financial standard (A) for the government for the purpose of determining the amount of the education voucher.

$$A_i = \frac{SO_i + B_i}{Up_i}$$

where:
SO_i – amount of the educational part of the general subsidy granted to the local government;
B_i – amount of additional subsidies from other income of the local government;
Up_i – conversion number of students in the local government.

Example of calculating the conversion factor for a student and the amount of education voucher he or she should receive

Assumptions:
– a student of private upper secondary school, living in a dormitory;
– the amount of the educational part of general subsidy for the local government: 100,000,000 PLN;
– additional subsidy from the local government: 8,000,000 PLN;
– the conversion number of students in the local government: 20,000.

$$A_i = \frac{100,000,000 + 8,000,000}{20,000} = 5,400 \text{ PLN}$$

$Wp_j = 1 + 0.082 + 1.5 = 2.582$ (as a student of private school – 1; as a student of upper secondary school – 0.082; as a student living in a dormitory – 1.5)

$$K_j = 2.582 \cdot 5,400 = 13,942,80 \text{ PLN}$$

CONCLUSIONS

Poland's system for financing education employs the idea of "the money follows the student". This means that the money for education of each student is allocated in the form of subsidies for local government. Such a system would greatly facilitate the implementation of education vouchers.

Education vouchers as a way of financing education in the long term has been criticised by both interventionists and economic liberals. However, it may be a good temporary solution as the educational services market is privatised. The main advantages of the vouchers is that they facilitate market access for private entities and widen access to the services of private schools for students from less wealthy families. The biggest drawback of this solution is the possibility of increased government control over private schools.

Implementing an education voucher that is unlimited, supplemental, independent of income, and conditional, and which has a fixed value using the weightings in the Ordinance of the Minister of the Education is possible without increasing public debt. In addition, wealthy governments could increase the amount of the voucher, which would not limit the possibility of financing education solely to funds received from the state budget.

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Summary. The goal of the article is to present the proposition of reform in the system of financing educational services by local governments, which could contribute to increasing the market share of private entities. Currently, the majority of educational services in Poland are provided by public institutions, which is contrary to the general trend towards liberalisation of economic policy and the privatisation associated with it. The article proposes an education voucher and presents one way to reform education, which would not generate any organisational problems for local governments and would not have a negative impact on public finances.

Key words: educational services, education voucher, local finance

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