The Threat to Higher Education: Diplomas Trading

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Abstract. Russia seeks to bridge the gap in the level of education, knowledge and skills of Russian workers and workers from developed countries. The training level of Russian workers is lower. Russia relies on the higher education system which has already created prerequisites for the «catching-up» development. The fact that these prerequisites have not been implemented does not lessen achievements of national science and education. However, one cannot ignore traps into which some areas of higher education may fall. One of them is a «diplomas trading». Some higher educational institutions (Institutes) breaking ties with a competitive market supply student to noncompetitive (monopolized) labor markets. A distinctive feature of these students is a specific demand: they do not seek to acquire knowledge or skills; they are interested in academic degrees which allow them to find good jobs in the labor market in a short time. These jobs are provided by the increasing public sector of the economy, including quasi-state structures – hierarchical Russian corporations. Applicants tend to monetize efforts required to obtain an academic degree. This circumstance has generated powerful incentives for the opportunistic behavior of university teachers. The specificity of the current situation is due to the fact that direct opportunism is typical of organizations rather than individuals.

1. Introduction
The problem of opportunism in high schools arose in the USSR. Opportunism had two forms – extortion and shirking. The existence of both forms was due to a high value of diplomas. The diploma rather than knowledge, skills and abilities was valuable for the Soviet citizen. In any case, this was typical of workers in the socialist economy. For example, managers of the automotive base were practical, sociable men having managerial skills. But they had to have academic degrees. Unfortunately, education costs were too high for them. On the other hand, their abilities to monetize efforts (loss of time, diligence) in order to obtain positive marks were significant. These factors pushed such students and teachers to search for mutually beneficial solutions. The teacher moved to the path of opportunism assigning a net utility belonging to the owner of the resource (the State). The teacher encouraged students to buy positive marks, i.e. he was engaged in «extortion». Shirking accompanies extortion. Since the teacher does not care about knowledge of students, he does not seek to deliver high-quality lectures and expand knowledge of students. It is clear that these actions pose a serious threat to the higher education system. In the USSR, the system of higher education managed to avoid the wide spread of opportunism (with the exception of some southern republics).
2. Problem statement
After the collapse of the USSR and beginning of economic reforms, Russian higher education was in a threatening state. Like any economic branch funded by the Government, the higher school lacked budget financial resources. At the beginning of the 21st century, science and higher education became priorities for the Russian Government. It turned out that the years of chronic deficiency were not the most dangerous period for the Russian higher education. An indisputable fact of Russian higher education is the market of sellers (Institutes) who sell Diplomas. This business is known as «Diplomas trading». The Institutes inform buyers that knowledge and skills which were previously considered as integral attributes of academic degrees are not obligatory for a diploma holder. The authors deal with the following aspects framing this phenomenon: labor markets where these Diplomas are valuable; methods used by the Institutes to maximize profits; signals used to differentiate these Institutes from those holding conservative views on the mission of higher education.

3. Purpose of the study
The Russian society searches for the ways to gain competitive advantages in the global market. The system of secondary [1] and higher education [2] plays a crucial role. However, attempts of the Government to make higher education more effective may bring unexpected results. For example, an increase in labor demand from public enterprises and institutions may create a «Diploma Market» which is a special segment of the educational market where academic degrees rather than knowledge and skills are sold. The authors argue that these Institutes are a threat to the entire system of higher education. It is necessary to search for signs (signals) that would help identify such sellers in the educational services market.

The main problems described in the article are as follows: creation of a diploma market where academic degrees are sold; gradual elimination of the market of high-quality educational services. The emergence of a diploma market became possible due to various circumstances. The main one is the increasing demand for diplomas as a tool of income. The behavior of buyers is rent-seeking [3,4,5]. The next important step is to identify reasons for preserving markets where it is possible to obtain revenues. The authors believe that the main reason is a huge public sector. The rule of «limited liability» prevails. It is a form of «soft budget constraints» [6]. The low labor performance is normal, since losses are covered by budget revenues. The requirement for professionalism and knowledge is formal.

4. Findings
The quality of higher education is one of the main factors ensuring the competitiveness of the national economy in the world market. It is logical to assume that a country with a high share of workers having academic degrees is richer due to the fact that a higher level of education implies a higher labor productivity rate. This hypothesis was not true for the USSR economy. Unfortunately, it is not true for the Russian economy as well. One can agree with those authors who attribute a high level of education (higher and secondary) to specific factors of economic growth ensuring an increase in GDP up to a certain limit. In order for economic growth to become innovative and continuous, special institutional conditions are required [7]. Without these institutional conditions, higher education can turn into a fiction.

The low efficiency of the Soviet higher education system was due to two factors. First, there was no incentive system that would encourage workers having higher education to disclose their creative (innovative) potential. Since the Soviet economy was based on traditionalism, innovations were not welcomed. In addition, the formation of full-fledged incentives was hindered by an egalitarian system of income distribution. This principle was a basis for the official remuneration policy of people. However, the principle of egalitarian income distribution was one of the moral values that dominated in the USSR. The desire to maximize wealth (as well as any uncommonness) was condemned by official authorities and society. These reasons - the lack of incentives for higher education and maximum use of acquired knowledge and skills - lied outside the higher education system. Now, when the vast continents of the market appeared in the Russian economy, incentives to have an academic degree, know-
ledge and skills have become much more effective. These incentives determine the behavior of applicants for higher education. It is hard to develop these incentives.

The low efficiency of the Soviet higher education system was due to the fact that resources concentrated in the higher education system were used not in the interests of the owner (the State). They were used to enrich teachers [8]. In other words, the system of higher education was eroded by the opportunism of higher school workers. The modern Russian high school cannot get rid of this shortcoming. It is necessary to identify causes of the opportunism in the Soviet higher education.

The opportunism of higher school teachers had two forms. Firstly, the members of admission commissions manipulated rules for selecting students. Secondly, teachers forced students to pay for positive marks. It is clear that both forms of opportunism were severely persecuted by official authorities. The ability to control activities of teachers and officials was limited («measuring difficulties»).

Under socialism, the educational services market was in the grip of rigid regulation; however, higher education was free of charge. There were no commercial education services. The higher education market required rationing. Each person could receive only one academic degree. Students were selected through exams. Competitive tasks were the same for all applicants. This system seemed to ensure equal rights for all applicants. But this was not the case.

In fact, there was a sophisticated system of tricks which allowed it to evade the requirement of anonymity during selection of students and artificially overstate the amount of points gained by applicants. Teachers were able to monetize the consumer surplus of applicants. Then, these people made students pay for positive marks. Extortion was widely spread in the Soviet system of higher education. The most corrupt high schools organized a very profitable business. First, applicants paid for the right to study at the institute. Then, they paid for positive marks. This resembled a «two-rate tariff» contract [9]. It is clear that in such institutions, the educational process was formal. Students did not possess knowledge and professional skills. Egregious cases became known to the general public. Law enforcement agencies restored order in the All-Union Law Correspondence Institute. In 1987, due to corruption-related crimes committed by teachers, the Azerbaijan Institute of National Economy located in Baku was liquidated and restored on the basis of Leningrad Financial and Economic Institute.

The prerequisites for the opportunism in high school are well known. On the one hand, this is a monopoly position of the teacher assessing the quality of knowledge of students. In fact, the teacher takes the same position as a person who issues certificates or licenses without which applicants cannot start a profitable business or have rare resources. This situation was described in the economic literature [10]. On the other hand, for the student, a positive mark has some utility. Therefore, the teacher as a monopolist in the market of positive marks has an opportunity to monetize part of the consumer premium which the student receives.

It is necessary to understand that there are two types of students. One type of students enters the Institute to «invest in human capital», acquire professional skills that will allow them to receive a more powerful income stream during active economic activities (H-students). An attempt to impose a «positive marks in exchange for money» is likely to fail. The H-students will not allow the Teacher to save on labor efforts in the form of shirking or poor-quality teaching (although it is difficult for students to control the teacher due to the asymmetry of information). Secondly, H-students will inform official authorities (heads of departments or deans) about facts of extortion. The H-students will force the Teacher to «play by the rules». However, there was one more type of Soviet students who sought to have academic degrees rather than acquire skills or knowledge (L-students). They were pennies from heaven for greedy teachers. For a large number of students, professional skills and knowledge were not a motivating factor. This behavior was caused by the socialist labor market.

In the Soviet economy, there was no competition in the public sector. Enterprises operated under soft budget constraints [6]. This means that losses (even chronic ones) were not considered as a threat to the socialist enterprise. The management had no right to change the range of products. It was unacceptable to change prices, choose customers, etc. However, managers had to strive for a steady decrease in production costs. At the same time, there was no powerful incentive system for saving resources, since the company could not independently manage its profits. It was more important for the
enterprise to fulfill the state plan. The lack of strong incentives to save resources, use equipment and innovations rationally caused formalization of the selection procedure in the socialist labor market. Of course, company managers would have been happy to hire knowledgeable students, but they agreed to replace professional workers with less professional ones. Existing regulations demanded that positions should be occupied by persons having an academic degree. There were no requirements for knowledge and professional skills. Even if the skills of a manager of a particular company subdivision (or a company) were insufficient to carry out assigned functions, these functions were performed by his deputies or closest associates. The practice when the department was headed by a well-known manager and coordinated by a more talented, but less well-known deputy manager was popular in the Russian Empire [11]. It successfully migrated to the economy of the USSR. A student's desire to have only a diploma (without relevant knowledge and skills) can be classified as a classic rent-seeking behavior. To understand the motives behind the behavior of L-students, let us recall that as an income component, the rent arises whenever the inflow of competitors is limited for some reason. As a result of lacking competition, the owner of resources can set the price that exceeds the competitive level. In the vast public sector of the economy, the presence of a diploma allowed an ordinary worker or a head of the department not to worry about his workplace and income. The main condition for deriving monopoly profits (rents) is observed: the marginal income is higher than the marginal cost of labor.

It is noteworthy that in the Soviet system of higher education, there were conditions for division of H-students or L-students. In the higher education market, rationing allowed for obtaining one academic degree on a full-time basis. However, this rule was in contradiction with the requirement of efficient use of labor resources. When the individual made a wrong choice, he was trapped. To overcome this problem, a new form of training was implemented. It is correspondence form of training. In fact, it was a shortened version of the full course. This decision was made taking into account the fact that alternative costs of higher education for working people were quite high. However, it was impossible to prevent students of the correspondence department from directing the excessive income to bribe teachers in exchange for positive marks. There was no desire to acquire new knowledge, since students occupied high positions in the management hierarchy. This fact made them L-students. In the market of L-students, certificates and diplomas rather than knowledge and skills were in demand. Thus, the lack of full-fledged competition in the socialist economy can be considered as a principal factor contributing to the opportunism and a decline in the quality of higher education.

The vast public sector generated a demand for diplomas instead of a demand for educational services. This means that there were prerequisites for opportunist behavior of teachers and other negative consequences within the higher education system. In the 1990s, abuses in the higher education system were of grotesque nature. Fake diplomas were sold. These were skillfully executed copies of diplomas issued by Institutes. Thus, the relation between real abilities and official assessment of these abilities was lost. Realizing the threat to the economic efficiency and public administration, political authorities took drastic measures. A unified register of diplomas was compiled. It made the most flagrant violations impossible. But as far as there are labor market segments that do not know the competition, incentives for abuses cannot disappear [12]. First of all, it concerns traditional forms of opportunism – extortion and shirking. It is difficult to combat these forms of opportunism due to existing measurement problems [13]. «Cooperation» of L-teachers and L-students does not allow outsiders to observe their dealings. However, this area does not remain completely impenetrable. There are several forms of control that can make opportunism in universities difficult and dangerous. There are persons that are interested in quality teaching. Firstly, this is the management of the Institute which sends market signals in two directions with the help of higher education diplomas. It informs employers that its specialists have more developed skills. For applicants choosing the Institute, it shows that graduates of the Institute receive high incomes or find jobs more rapidly. The loss of professionalism by graduates of the institute does not allow the Institute to give a market signal to the higher education market [14] and attract students from the competitive market. Secondly, the control can be carried out by H-students who need to acquire relevant knowledge. Of course, students do not have the same professional knowledge as the teacher has. But they can still prevent the most blatant forms of opportunism
and reveal instances of unprofessional teachers. Thirdly, the control can be exercised by the teaching environment if it consists of H-teachers. The fact is that unprofessionalism or opportunism of one teacher will inevitably manifest itself because students will not be able to solve tasks set at later stages of education. The costs of low-quality teaching are relatively low, since the control is carried out automatically. It is clear that rational teachers will try to influence L-teachers, because they partially shift the burden of teaching. Fourthly, one more element of teaching quality monitoring can be the reputation of teachers. They may be frustrated by attempts to improve their well-being by reducing the quality of teaching, appreciate knowledge that they have, have a healthy value system, or they may be afraid of prosecution for opportunism. However, it is better to pay for professionalism.

The last remark reminds that fierce competition in the labor market between the Institutes as sellers of specialists is the most effective and cheapest tool for controlling the quality of educational services. The presence of an extensive segment where formal requirements are imposed on an employee can destroy the higher education market. Evidence of this is the phenomenon of «diploma trading». Some Institutes choosing between two labor markets (where the buyer is a private firm, and where the employee is hired by a public or quasi-public firm) ignore the first market and move to the second one. We should understand that such Institutes threaten the existence of higher education (at least in some areas of knowledge). The Institute engaged in diploma trading lacks incentives for provision of qualitative education. If the Institute is known as an H-seller, it is even advantageous to reduce the quality of education, if it is accompanied by a significant decrease in costs. This policy will be beneficial if it takes a long time to understand that a specialist lacks required skills [15]. Even after that, one can expect that for several years the market price of a specialist will be higher than training costs. As for the level of training costs, there are many tools to reduce them without attracting attention of the general public. For example, it is possible to dismiss most of the professors replacing them with associate professors or less titled teachers. Another way to reduce costs is to reduce the number of lectures and seminars replacing them with «independent activities of students». Some institutes tried to reduce the time for obtaining an academic degree, but this initiative was suppressed. In the end, the Institute reduces costs labelling it «cost management». Most often, the cost reduction is accompanied by a decrease in the price of specialists in the labor market. In the end, the Institute turns into an office printing diploma. Lectures are delivered formally or not delivered. The institute and L-students are waiting for the deadline to exchange students' money for state certificates which allow them to hold positions in public enterprises. Obviously, in this model, the Institute uses resources belonging to the owner (Russia) to increase its own income. It is a classic opportunistic behavior when the role of the opportunist is performed by organizations rather than individuals. These Institutes turn into organizations that are not able to supply H-students to the labor market [16, 21]. The Institute acquires a reputation of the L-seller and cannot exist without the state support. It is clear that diplomas issued by this Institute are no longer able to perform the function of market signals. How do H-students react to these changes? Experience shows that they leave those regions where there is no chance to acquire quality knowledge and skills for those cities where most of the Institutes have an H-reputation in the educational market.

References
[1] Greenspan A 2010 The Age of Turbulence Problems and Prospects of the Global Financial System (Moscow) United Press Ltd
[2] Phelps E 2015 Mass Prosperity: How grass-roots innovation has become a source of jobs, new opportunities and changes (Moscow) Publishing house of the Gaidar Institute
[3] Krueger A 1974 The Political Economy of the Rent–Seeking Society American Economic Review 64 291–303
[4] Tullock G 1980 Efficient Rent Seeking Texas A and M University Press
[5] Tyrol Zh 1996 Markets and Market Regulation: Theory of Industrial Organization (St.Petersburg) Economic School
[6] Kornai J 1990 Deficiency (Moscow) Science
[7] Baltserovich L, Zhonts A 2012 Institutional systems and driving forces of the economy (Moscow) Thought
[8] Hart O D 2001 Incomplete contracts and the theory of the firm (Moscow) Delo
[9] Pindyke R S, Rubinfeld D L 2000 Microeconomics (Moscow) Delo
[10] Rose-Ackerman S 1978 Corruption: A Study in Political Economy (New York) Academic Press
[11] Witte S Yu 1994 Memories (Moscow) Skif Alex
[12] Kolmakov A E, Leskinen M I 2018 «Junk» Publications’ Market CONFERENCE 2018 RPTSS vol L 606–615 Irkutsk National Research Technical University
[13] Williamson O 1996 Economic Institutions of Capitalism: Firms, markets, «relative» contracting (St. Petersburg) Lenizdat
[14] Spence M 1974 Market Signaling Cambridge Harvard University Press
[15] Milgrom P, Roberts J 1986 Prices and Advertising Signals of Produkt Quality Journal of Political Economy 94 796–821
[16] Bogatyreva M V, Matveev N V 2018 Kpi As Market Surrogate CONFERENCE 2018 RPTSS vol L 230-238–615 Irkutsk National Research Technical University
[17] Smith A 1993 Anthology of economic classics (Moscow) ECONOV
[18] O‘Sullivan A 2002 Economy of the city (Moscow) INFRA – M
[19] Hicks J 1993 Rehabilitation of consumer surplus (St. Petersburg) Economic School
[20] Michael S 1974 Market Signaling (Cambridge) Harvard University Press
[21] Solovev D B 2018 Experimental Data Based Current Transformer Mathematical Simulation in Micro-Cap Program International Review of Electrical Engineering (IREE) 13(2) pp 149 -156. [Online]. Available: http://dx.doi.org/10.15866/iree.v13i2.13380