The economical efficiency of private investments in higher education in Russia

Elena Maksyutina
Kazan Federal University
Naberezhnye Chelny Branch, Russia
Economic Faculty
elbe@fromru.com

Abstract

The article investigates the economical efficiency of investments in higher education in modern conditions of Russia. The beginning of the article includes a characteristic of the existing empiric research concerning the efficiency of investments in human capital assets. Further the author of the article introduces the results of pay off calculation of private investments in higher education. The result of the research was that in modern conditions of Russia investments in higher education are exceedingly advantageous. High norms of higher education feedback and short period of pay off of these investments explain the reasons of continuously growing demand for it on the part of the population, especially young people. The article proves that the level of population education in Russia is quite high, however accumulated human capital asset is used insufficiently effective. Many people with higher education are forced to take jobs not requiring higher education. Sharp shift in educational behavior of Russian people raises new demands to labor market. Graduates of higher educational institutions, appearing on a labor market, form qualitatively different demands towards it. But tempo of Russian economics development today can not provide job positions for all graduates of higher educational institutions. That is why structural change of economics is needed.

Key words: higher education, internal rate of return, payback period, labor market

Prestige of higher education in Russian society is quite high. 75% of school graduates plan to immediately enroll in a higher educational institution, more than half of students of colleges and technical schools intend to get higher education as well. Parents of the majority of pupils think that higher educational institution is a sole possible perspective for their children and are ready to invest their savings in their future. At the present moment aggregate investments of the government, population and business in higher education amount to 1,1% of the national income, 35% of them are private funds (funds directed to higher education by population). What is the reason of such strong demand for higher education on the part of population, especially young people? Will the funds invested by population in higher education pay off? It is obvious that answers to these questions are extremely topical. Main goal of our work was the research of economical efficiency of private investments in higher education in modern economics of Russia.

In the economic literature of the pre-reform period the idea of the analysis of economic return of the creative faculties of man has not received recognition. This was due, on the one hand, to the thesis of the non-productive nature of education, health and other sectors of socio-cultural sphere, rising to the works of classics of political economy. On the other hand, for each person receiving all levels of education, health care, with few exceptions, were free of charge, in connection with this population had no problem with repayment of the funds invested for this purpose.

However the theory of the human capital starts with position that the human capital is some accumulated stock of the blessings which at expedient use should promote growth of productivity and incomes. Consequently, it implies a certain correlation, for example, between educational level and wage of workers.

In economically developed countries the statistics proves quite stable and close relationship of education and training with pay. Thus, in the USA last decade the average costs of higher education in one of 50 prestigious universities were about 100 thousand dollars. The payment for the education necessary for work in high-tech manufacturing is five times bigger than all the other costs - for food, shelter, clothing, etc. The costs for training surpassed the average cost of production capacity, which workers have to work (about 80 thousand dollars) [2, p.11,98]. However, the impact of educational attainment surpassed all expectations. According to the American statistics, a worker with college degree throughout his career earned up to 600 thousand dollars more than that with only a school education, and the difference of expected returns of a holder a of doctor's degree in relation to a college graduate in this period reached 1.6 million dollars.

Abroad the private and social rate of return, which measures the efficiency of investments in different types of education is repeatedly calculated. It is estimated that in developed countries for secondary education standards are on the

level of 15-20%, for higher -10-15%, and for steps associated with a master's degree or doctor – on the level of 5% [4, p. 5,12].

The results of empirical studies conducted by P. Greiser, P. Gregory and J. Kolheyz based on a survey of former Soviet citizens who had emigrated to the United States of America, showed that in the Soviet Union wages were weakly correlated with the level of education and other assets of the human capital. According to estimates published by P. Grazer, the rate of return on investment in education ranged from 2.3% to the overall average up to 5% for higher vocational education, while women had a higher rate of return of education than men [5, p. 10,12].

The consideration of the costs of education, training, improved health, etc. as the investment costs forces to look at the issue of economical efficiency of investments in the human capital in other respects. The distribution of payment for education, medical services for the population means the need, firstly, to divert significant resources from the current consumption, to change their savings priorities, and secondly, to make investment decisions, considering both the costs and benefits. In this connection the question arises about the individual economic feasibility of these costs.

In Russia empirical researches of efficiency of investments in human capital was a little. One of the most interesting is the work executed D.Nesterova and K.Sabiryanova. According to the Russian monitoring of economic status and health of population authors analyzed the factors influencing level and dynamics of a wage through an estimation of rate of return of education, experience and other characteristics of workers. The analysis of the equation of a wage of J. Mincer, executed Nesterova and Sabirjanova on the basis of the data for 1994-1996, has shown that the private rate of return of education made during this period of 6-8 % of a gain of a wage for each additional year of education; the norm of return from experience on a labor market was equal 1-3 %; return from the special human capital, i.e. the experience which has been saved up on the given workplace, it has appeared it is not essential and statistically it is not significant [5, p.11,15].

Among modern researches, in our opinion, works of scientists of the State University of Higher School of Economics are of considerable scientific interest. Thus, R.I. Kapelyushnikov in coauthorship with A.L. Lukyanova presented estimations of rate of return calculated on the grounds of Mincer wage equation. The authors used data of 6-18 rounds (1994-2008) of Russian monitoring of economic status and health of population. According to R.I. Kapelyushnikov and A.L. Lukyanova estimations, the rate of return of education fluctuated in the range of 5-7% during these few years. In other words, increase of education duration for one year provided growth of earnings approximately up to 5-7%. For women rate of

return of education were approximately by one and a half as large as that of men: 7,5% verses 5% [3, p. 74,75].

Consideration of expenditures for acquisition of higher education as investment in human capital assets, make us see these questions in a new light. In the classical model of valuation of the investment into the human capital benefits from education are expressed on a higher level of earnings after receiving education in comparison with the level of wages of nongraduate persons. The costs of education include direct costs (tuition, the costs of purchasing textbooks, etc.) and indirect costs in the form of "lost" wages during training period.

Traditionally, in the scientific literature the economic efficiency of the human capital investment (including education) is determined by using the indicators of net present value (NVP), internal rate of return (IRR), profitability index (PI), payback period (PBP). Unfortunately, in the works of local scientists calculation of the above indicators was done only to determine the efficiency of investments in specific educational projects, or to compare different investment projects in education, and select the best of them. The calculation of the efficiency of obtaining the degree of MBA (Master of Business Administration) in Russia implies to this kind of work as a special case of investment in the human capital.

We made calculation of the private costs return for receiving higher education in the contest of present-day by means of indicators of internal rate return and payback period. Data of sample inquiry performed by the Federal State Statistics Service of Russia was taken as informational base of the research.

The internal rate of return (IRR) is a rate of interest where by the present value of future benefits of education is equal to the present value of its costs. The higher the IRR, the more profitable investments into the human capital. In other words, internal return rate shows the percentage of increase of a person's wage if he studies one year longer.

The formula for the private rates determination return from investment into the higher education is:

$$\sum_{t=1}^{T} \frac{(B_t^1 - B_t^*)(1+j)^t 12}{(1+r)^t} = \sum_{t=1}^{t_1} \frac{B_t^1 (1+j)^t 12}{(1+r)^t} + \sum_{t=1}^{t_1} \frac{C_t}{(1+r)^t}$$

where r – the internal rate of return of investment in higher education;
B^1_t – the monthly earnings of persons with higher education per year t, rub.;
B^*_t – the average monthly wage of persons with general secondary education per year t, rub.;
T – the period of the forthcoming work, years;
t_1 – time courses at high school, years;
t – time index;
j – the average level of career growth,%

C_t – the average annual tuition fees in universities now, rub.

The investment payback (returns) into the higher education is the time the sum of the additional benefits of higher education, calculated as the difference between the earnings of persons with higher education and secondary general complete education, will cover the amount of costs for getting education.

The formula for the payback period determination is:

$$p = \frac{(B^* \cdot 12 + C) \cdot 5}{(B^1 - B^*) \cdot 12}$$

where p – payback period of investments in higher education, years;
B^1 – the monthly earnings of persons with higher education, rub.;
B^* – the average monthly wage of persons with general secondary education, rub.;
C – the average annual tuition fees in universities now, rub.

The cost effectiveness for getting higher education is differentiated by sex. This is due to the fact that almost all parameters in the model differ essentially for men and women. In the training on a full cost recovery for men and women only tuition fees will be the same. With regard to the higher education benefits, they are mainly in employment, where there is a discrimination against women in payment for labour. Moreover average duration of wage employment of women in most countries of the world, including Russia, is shorter than that of men.

With an allowance for the significant gender differences in the investment efficiency into the higher education in Russia, we calculated inner return rate and investment payback period separately for men and women. Performing the calculations we took the average wages, differentiated by sex and educational level. We also took the maximum period for the labour activity as differentiated by gender: it was 32 years for women, taking into consideration the age of onset (22 years) and end (54 years) of the employment activities, for men -38 years (from 22 to 59 years).

Results of our research of efficiency of private investments in higher education show that in modern conditions of Russia the investments in education (first of all higher education) are exceedingly advantageous. Return rate from every additional year of education are close to 10%. That makes approximately the same figure as in developed countries. In other words, increase of education duration for one year provides growth of earnings approximately up to 10%. Average period of higher education investments pay off makes not more than 2 years. Taking into account value of "lost" earnings – almost 10 years. The economic return from higher education in the male half of Russia's population is higher than that of women. Men have higher return rates of investment in higher education and a shorter payback period.

The so called educational awards can also be used as alternative indicator of investments pay off in education. In this case not how much the wage increases with an additional educational year is estimated, but how much it is increased at transition of a person from lower to higher level of education, for example, from secondary education to higher.

It turns out that at all other equal conditions people with higher education earn almost 80% more then people with secondary education, i.e. educational award for higher education in Russia makes about 80% (76,3%). For higher educational institution graduates educational award makes about 14%. Those people, who graduated from professional technical colleges it gives almost nothing, i.e. gain in wage is only about 3%. And those, who did not get even secondary education loose in wage about 8%. Amount of educational awards successively increase at transition from lower to higher stages of educational scale both for men and women.

Acquisition of higher education is the best form of protection from unemployment. In Russia, as in other countries, dependence is traced: the higher is the level of education, the lower is the level of unemployment. At that the lowest level of unemployment is typical for people with higher education.

Thus high pay off of higher education as well as stable and high level of award for higher education in a great measure explain the reasons of continuously growing demand on it on the part of population and sharp increase of students quantity in corresponding age cohort and as per every 10 thousand people. Even now among Russian citizens at the age of 25-35 years old part of population with higher education makes 57%. Russia has 620 students per every 10 thousand people. This is one of the highest figures in the world.

No wonder that increase of demand for higher educational institution diploma stimulates widening of offer of higher education, accompanied by decrease of its limiting quality. At these observed economical advantages, which are promised to their owners by the presence of higher education, it is difficult to count on the fact that young people will change their priorities in favor of initial or secondary professional education, which pays off much worse. This tendency – growth of market weight of advanced general tertiary education in comparison with highly specialized professional education is a characteristic for all developed countries of the world [1, p.450]. And in this matter Russia is not an exception .

Level of population education in Russia is quite high, however accumulated human capital asset is used insufficiently effective. Many people with higher education are forced to take jobs not requiring higher education. According to provided estimation, to workers taking jobs which don't correspond to their education and qualification, one can relate about 40% of people with higher, about 50% with secondary and about 20% with initial professional education.

Sharp shift in educational behavior of Russian people raises new demands to labor market. Graduates of higher educational institutions, appearing on a labor market, form qualitatively different demands towards it: they are interested in not only well-paid jobs, but creative jobs connected with communicational technologies. Social status of a job becomes important for them: young people with higher education would rather prefer a job in an office with people of their own educational circle, but with a lower wages, than a job in service business among people of other circle, even if more well-paid. But tempo of Russian economics development today cannot provide job positions for all graduates of higher educational institutions. That is why structural change of economics is needed. It is necessary to provide creative job positions on the factory floor. It is necessary to provide business incubators oriented not only to technological innovations, starting grants for young freelancers are also needed, as they make already 20 percent of labor market. An opportunity for young entrepreneurs to get a credit is also needed. Russia should use new educational structure of the society as resource of its development in the approaching decade.

Bibliografy

1. Wage in Russia: evolution and differentiation: monograph. / edited by V.E. Gimpelson, R.I. Kapelyushnikov. – Moscow. : Publishing house of the State University of Higher School of Economics, 2008. – 575 p.

2. Inozemtsev V.L. A modern postindustrial society: the nature, contradictions, prospects: the manual for students of high schools / V.L.Inozemtsev. – Moscow, Logos, 2000. – 432 p.

3. Kapelyushnikov R. I. Transformation of the human capital in the Russian society (on base of Russian monitoring of economic status and health of population) / R.I.Kapelyushnikov, A.L.Lukyanova. – Moscow: Fund «Liberal mission», 2010. – 196 p.

4. Kurgansky S.A. Human capital: the methodological analysis of formation and estimation / S.A. Kurgansky. – St.-Petersburg, 1999.

5. Nesterova D. Investments in human capital in a transition period in Russia / D.Nesterova, K.Sabiryanova. – Moscow, 1998.