

# Education Costs as an Investment in Human Capital

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**Abstract** — At the stage of post-industrial development of social production, human capital becomes the basis for the income of the majority of the population in the form of wages, and determines the standard of living in a region or country, which, in turn, reflects the level of development of productive forces and the nature of production relations. The fall in real incomes of the population observed in recent years is an objectively observed risk of violating the conditions of a decent life and free development of a person, guaranteed by Art. 7 of the Constitution of the Russian Federation [1]. At the same time, as the results of the study show, to a certain extent, there is a direct proportional relationship between the level of education, the level of income of the population in the form of wages and the quality of life in a post-industrial society, which determines the relevance of the topic of this study. This dependence weakens at the mesoscale of the economy, but retains its importance at the mini- and micro level, although it is limited by subjective factors associated with the instability of the labor market.

**Keywords** — *education, human capital, remuneration, investment Introduction*

## I. INTRODUCTION

The main provisions of the theory of human capital were formulated in the mid-twentieth century in the United States. Economists, considering investing in human capital, pay special attention to investing in education capital. The work of economists such as G. Becker [2], W. Bowen, L. Samuelson, V. Nordhaus, L. Throw, M. Fisher, T. Schulz [3], and others are devoted to this topic, etc.

In domestic economic science, the study of the problems of the formation and use of human capital is the traditional subject of special research, and is considered by many Russian scientists in various aspects.

However, establishing the relationship between individual investment in human capital and the level of wages, the studies conducted do not take into account the influence of a variety of subjective factors in the face of a decline in real incomes of the Russian population.

The object of study is the relationship of education costs and income in the form of wages at various levels of the economy.

The subject of the study is the feasibility of investing in education in the face of a decline in personal incomes of the population in the form of wages.

The purpose of the study is to consider and explore the importance of education in the modern economy.

The goal is achieved by solving the following tasks.

1) to generalize the existing approaches to assessing the relationship of investment in education and the level of wages;

2) to evaluate the elements of the influence of education on the amount of personal income;

3) to determine the influence of the level of education on the formation of personal incomes of the population in the form of wages.

The scientific novelty of the study lies in the disclosure of contradictions in the relationship "level of education - remuneration", which will neutralize the risks associated with overcoming these contradictions.

The study was conducted in the period of 2015-2019.

## II. METHODS AND MATERIALS

Depending on the solution of specific problems, modern theoretical and empirical scientific methods were used in the study: historical, statistical-economic, monographic, experimental, computational-constructive, balance-sheet, abstract-logical, complex-program-target, economic-mathematical.

## III. RESULTS

The costs of education made in order to increase labor productivity and contribute to the growth of an individual's income, along with investments in special training, physical condition and motivation, are investments in human capital, in particular, in its intellectual component. Investing in human capital is the time and money spent on education and training.

Sources of investment in education are personal funds of the population, funds of business and the state.

Accordingly, the return on investment in education can be:

1) a high level of individual earnings;

2) increase in value added in economic structures [4];

3) contribution to the socio-economic development of the state [5].

Of particular importance in determining the income on human capital is the distribution aspect, since the income received depends on the type of capital to which they relate. Thus, net labor income is wages at the minimum wage level. Income derived from the physical and mental natural abilities of a person is a kind of rent for natural abilities. The income on intellectual capital received as a result of an increase in education will be considered the difference between the actual wage and the minimum rate.

However, such a distribution is rather arbitrary. The main problem is that labor is the result of emotional and rational motivations, as well as human biophysical and mental abilities, which, in turn, are inherited natural abilities or acquired during life, and not necessarily in the process of learning directly.

It is equally impossible to clearly divide the income received by the entrepreneur in the form of added value into income from the application of labor and income from the use of means and objects of labor.

In addition, under the conditions of the currently imbalanced Russian economy, the relationship between the quality of labor and its pay is almost lost.

The theory of human capital proceeds from the position that capital is a certain stock of goods, which, by accumulating, brings income through investment. Consequently, the relationship between wages and educational level, physical health, quality of training, and the volume of production experience is based on the cost of their acquisition or creation.

Expenses that increase the productive qualities and characteristics of an individual can be considered as investments, since current costs are incurred with the expectation that these costs will be repeatedly offset by an increased income stream in the future. So, in particular, in the UK, the average bonus to the salary for higher education is about 23.5%, and the additional earnings due to the level of education throughout the life of an individual exceeds the cost of obtaining education 10 times [6].

Theorists of human capital proceed from the concept of wages as a kind of layered structure, where each layer is associated with a certain level of education. That layer of earnings that corresponds to this level of education is the cash income from it. So, for example, the economic effect of higher education will be equal to the difference in the lifetime earnings of two people - one who graduated from a higher educational institution, and the other who received a secondary education [7].

In addition to direct education costs, economists include "alternative incomes" in the composition of educational costs. These are incomes in the form of wages, which could be received by students for paid work instead of training [8]. This loss of profit is about half the total cost of training; their share ranges from 50-60 % of the total cost of higher and secondary education [9].

Investments in human capital contribute not only to an increase in an individual's income, but also to an increase in labor productivity [10].

Education has an impact on individual incomes. Moreover, they vary significantly from the level of education, and, accordingly, the size of the costs of obtaining it, which uniquely connects the distribution of national income between social groups in the macroeconomics and personal incomes in the microeconomics [11].

In addition to additional income, an increase in a person's education often gives him quantitatively weakly measurable, but qualitatively significant advantages in the form of improved working conditions, leisure and consumer choice. In addition, a person receives additional professional prospects, as well as an increase in social status in society and the possibility of self-realization, because, according to research [12]:

- 60% of the difference in people's incomes falls to education;
- 40% - to all other factors (health, natural abilities, social origin).

Thus, the relationship "level of education - level of wages" can be described by the Cobb – Douglas function [13], but subject to some limitations.

So, in particular, two mixed trends affect the tightness of the relationship.

On the one hand, the level and quality of education contribute to an increase in an individual's personal income in the form of wages.

However, in a low-income population, opportunities for quality education are quite limited.

In conditions of deep socio-economic differentiation of the Russian population by income level, the relationship between the level of disposable income and the possibility of obtaining a quality education becomes apparent. Strata of the low-income population are not only unable to show solvent demand for educational services, but they also do not have an objective need for higher education. Highly profitable groups of the population (3-5 %) are indifferent to higher education in Russia, since the income level of this social group provides it with a quality education abroad. In addition to these polar groups in the transforming Russian economy, there is a wide stratification group that is distinguished by certain professional and educational characteristics that provide its representatives with high socio-economic importance due to their mass character.

Characteristic of this group is that the size of the remuneration of workers in different sectors of the economy, performing approximately the same amount of equally complex, difficult and stressful duties, can be incommensurable.

According to the studies of specialists, there is a fairly stable relationship between earnings and the level of education of workers in Russia as a whole, despite significant differences

in regions and industries. The increase in earnings by education, relative to the minimum wage, in Russia varies by industry from 130% to 475%, and the weighted average increase is 240%.

If we take the average monthly accrued wage per employee in nominal terms as the basis, then the wage level in the country as a whole exceeds this indicator in industries more than 2 times: extraction and transportation of fuel and energy minerals, financial activity, construction.

The lowest average monthly wage in other sectors of the nominal is:

- agriculture, hunting and forestry - 40%,
- textile and clothing production - 50%,
- science and education - 60%.

In addition, there is a differentiation of income depending on the region of residence and the category of settlement [14]. So, the leading cities in terms of income are traditionally Moscow and St. Petersburg, the level of wages exceeds the national average 1.5 times.

Consequently, there is no direct relationship between education, quantitative and qualitative assessment of labor and real wages in the economy as a whole, but such a dependence can be unambiguously assessed with a margin of error when the "region / industry" restriction is introduced. So, remuneration to a greater extent depends on the position, the appointment for which is determined mainly by education (qualification) and work experience in this specialty.

#### IV. CONCLUSION

The Russian economy is characterized by the acceleration of the processes of socio-economic stratification of the population in many determinants, among which the most important are the levels of income and education. The impoverishment of the majority of the population leads to significant restrictions on demand in the education market, which, combined with declining budget funding and the structuring of educational institutions, does not contribute to improving the quality of educational services. At the same time, the education system still plays a leading role in the development of all spheres of society. Despite the loss of the direct dependence of wages on education in the economy of the Russian Federation as a whole, the efficiency of investment in education remains at the macro- and microeconomics level.

At the mesoeconomic level, there is also an indirect effect of return on investment in education, expressed as an increase in GRP and as the inverse effect of GDP growth on the socio-economic well-being of society in the form of an increase in socially significant budget expenditures [15].

By virtue of this, it can be argued that the level of education for the most part determines not only the socio-economic structure of society, but also acts as a factor in smoothing out social tension, and helps to adapt the population to the dynamic conditions of a market economy.

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