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Management of the sustainable development of human capital in the terms of macroeconomic instability

Svetlana G. Absalyamova^{a*}, Timur B. Absalyamov^b, Chulpan F. Mukhametgalieva^c,
Asiya R. Khusnullova^d

^{abc} Kazan Federal (Volga region) University, 18 Kremlyovskaya street, Kazan 420008 Russia

^d Kazan Cooperation Institute (branch) of the Russian University of Cooperation, 58 Ershova street, Kazan 420081 Russia

Abstract

The article is devoted to the search of indicators of valuation of the sustainable development of human capital. The relation of sustainable development of human capital with the cyclical economic development was studied. The influence of human capital on the achieving long-term sustainable economic growth is analyzed. Also, the influence of information economy on the quality of the reproduction of human capital is explored.

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I. Introduction

In the conditions of the crisis, the process of strengthening of the stability of the reproduction of human capital plays crucial role. During this period, many kinds of industrial and economic resources, such as bank loans and investments, accumulated in the stock market, are too expensive or not available for economic agents and the processes of commercial calculations and reproduction of capital become more complicated. Human capital becomes one of the most important factors in the progressive development and sometimes it is just basic survival element of enterprises and organizations. Human capital is able to transform into innovation, into advanced ways of production organizing, which is particularly valuable in the terms of very limited material and financial resources. In addition, to enter the upward phase of the economic cycle on time you should rely on the high quality of human capital.

* S.G. Absalyamova. Tel.: +7-917-234-7081;
E-mail address: s.absalyamova@yandex.ru

II. Materials and methods

The issues of the determination of the economic essence of the "human capital" are in the focus of economists in recent decades [1,2,3,4]. One of the most topical problems is the problem of the assessment of human capital at the micro and macro levels.

Different proxy variables that reflect the level of education or level of training of individuals are used as the simplest measures of human capital. These include the following indicators [4]:

- Indicators of literacy rates or the level of education of the population;
- School enrollment rates;
- The average number of years of education of employees in the economy.

These indicators are only approximate measures of the human capital quality, which limits their use in statistical calculations.

Also, there are the valuation methods of human capital: the method of capitalized income and expenses method [1]. Despite some shortcomings, both methods of valuation of human capital are widely used in economic research. Review of the results of empirical assessments of human capital value can be found in many studies [4].

The index method is used to bring the various elements of human capital to a single coordinate system.

The most famous index that is used in the practice of evaluation of human capital is the Human Development Index (HDI).

III. Human development index

In our opinion, the drawback of HDI, as well as of other composite indices, is that the algorithm for their calculation does not include the degree of consistency with each other private indicator included in the calculation of the index. Meanwhile, if the values of the partial indicators of the index are relatively close to each other, then this index is more stable than in the case of private index figures are significantly different from each other.

To eliminate this drawback of HDI, we propose to use the human capital sustainable development index (HCSDI).

$$HCSDI = \frac{HDI}{\sigma} / \max \left\{ \frac{HDI}{\sigma} \right\} \quad (1)$$

where HCSDI – human capital sustainable development index;

HDI – human development index;

σ - standard deviation of private indicators included in the calculation of the HDI, from their average value;

$\max \{HDI / \sigma\}$ – the maximum value of the test indicator in the population.

The interest question is the mutual influence of the HDI and HCSDI on each other. In order to identify the nature of the influence we have constructed the regression model (Fig. 1). The study went to the analysis of modern trends in the formation of human capital, carried out with using a statistical framework and methodological tools of UNDP [8], the Federal State Statistics Service of the Russian Federation and some selected surveys.

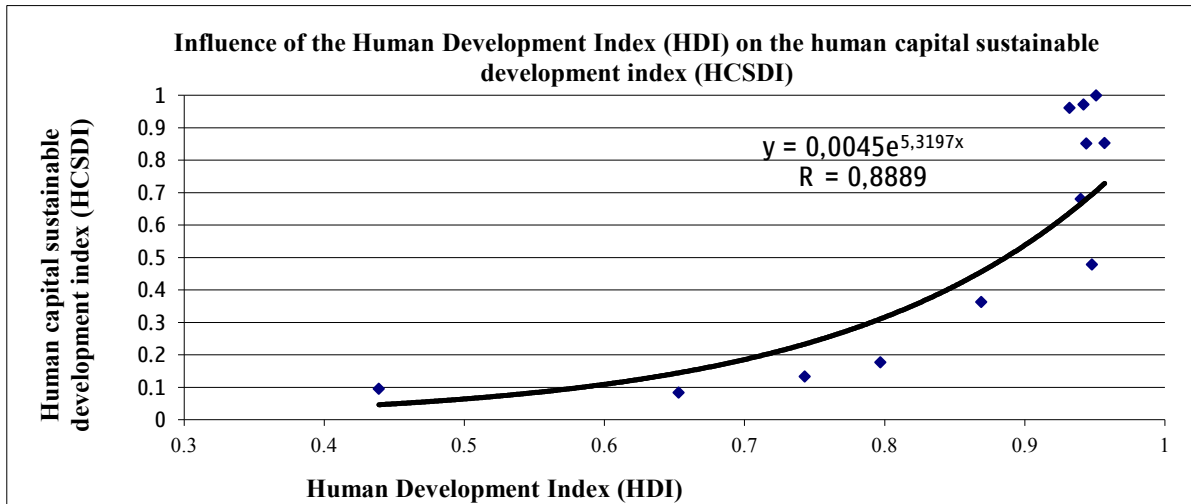


Fig.1. Influence of the Human Development Index (HDI) on the human capital sustainable development index (HCSDI)

As it shown in Figure 1, there is a stable relationship between the studied indexes, and it's evidenced by the rather high, close to 1, value of the correlation coefficient (R). So, there is a direct relationship of these factors. Therefore, ceteris paribus, the higher the value of HDI, the higher the value of HCSDI. The smaller the spread between the proportions of the individual elements of the reproduction of human capital (i.e. the higher the HCSDI), the higher the efficiency of the system as a whole (HDI).

The conclusion is that the state, society and individual businesses should strive for sustainable, coordinated development of education, health and economic development in general. In this case the additional synergy effect will be provided for sustainable development of human capital.

We have evaluated the HCSDI of individual countries.

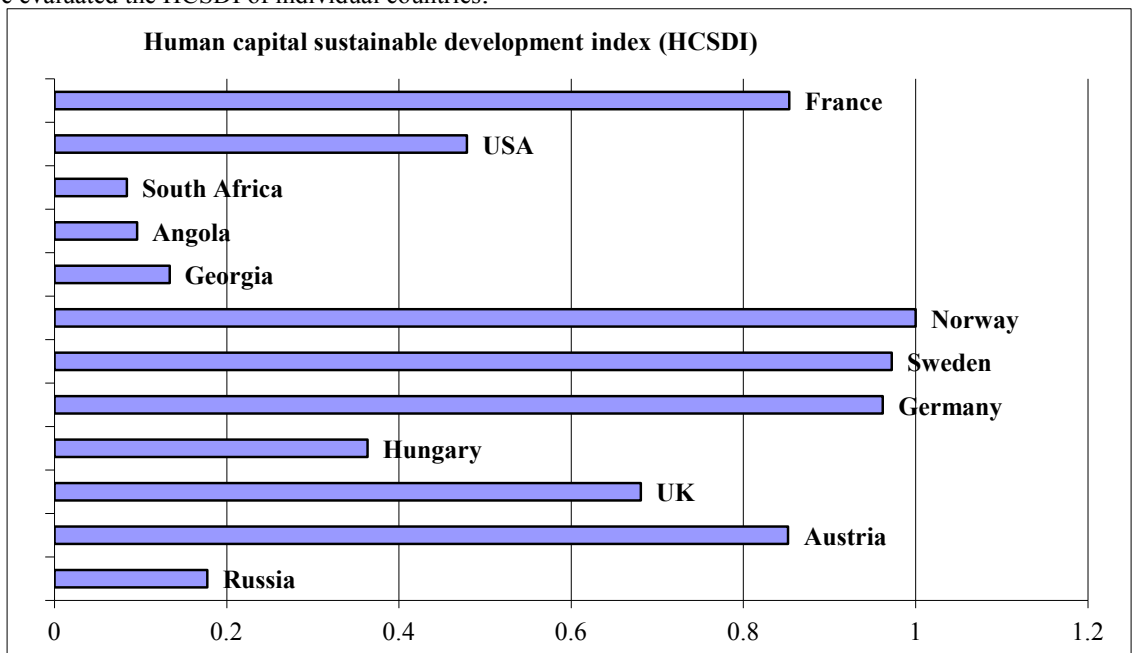


Fig.2. Cross-country comparisons of the human capital sustainable development index (HCSDI).

For Russia, HCSDI is only 0.18 on a scale of 0 to 1 due to the low coherence of some factors of reproduction of human capital such as education system, health care system and the level of per capita income.

In the theory of human capital the rather poorly researched issue is the issue of determination of the optimal rate of change in public and private spending on the reproduction of human capital, depending on the stage of the economic cycle.

Studies have shown the dependence of the public expenditure on human capital from the cyclicity of economic development. In the conditions of long-term social and economic crisis the state budget abilities is being reduced and in the long period of economic growth, on the contrary, they increase. However, to distribute the state's investment in human capital just as a share of total budget revenues seems methodologically not quite correct.

In addition, it should be noted that public investments in human capital have a recurrent impact on cyclical economic development. Therefore, it is necessary to plan the rate of change in government spending on the reproduction of human capital depending on the two most important parameters: the budgetary framework and state objectives to overcome the crisis stage of the economic cycle quickly and ensure long-term sustainable economic growth.

Human capital provides the basis of the innovation economy and is able to offer new forms of organization of production and management, which may allow economic agents to survive during the crisis.

Slowdown in economic growth should not lead to the cuts in the social programs. The only significant factor in overcoming the crisis phenomenon can be an increase of investments in human capital, which is formed on the basis of a system of innovative solutions and innovative ideas. The amplitude of public spending on human capital should be much smaller than the amplitude fluctuations of the economy as a whole.

IV. Telecommunication technologies as a factor of stability of human capital realization

The transition to an information economy has a huge impact on the development of humanity as a whole, and especially on the quality of the reproduction of human capital. This happens in the following areas:

Firstly, the process of formation of the elite middle class employed in financial services, management, media, areas of soft-tech and high-tech, etc., which are characterized by a high standard of living, based on the realization of their human potential, becomes stronger. [5]

Second, the development of information and communication technologies and the Internet has opened a virtual space for work, has formed the Internet economy (e-economy) and the corresponding electronic markets (e-markets, virtual markets) and electronic business (e-business, e-commerce). Information and communication technologies have not only changed the structure of employment, the ratio of working and leisure time, but also opened up new avenues for self-employment. Modern communications make it possible to realize the intellectual capital, working at any distance from the place where the performance is needed. In this regard, science began to use the terms "remote work", "telework", "telejob". [6]

Almost all self-employed workers, representing "computer professions" (programmers, web designers), are e-Lancers. Modern e-Lancers can be called "homeworkers" of the information economy era.

Third, the Internet technologies have opened new opportunities for the development of educational programs and improving the quality of human capital. Distance education develops rapidly, online learning is stimulated by the Bologna process and the "Erasmus" project, in which students from different countries can participate in online seminars to learn any foreign university course. Corporate distance learning system develops fast. Up to 40% of large companies use online courses for retraining and professional development of its employees. All of this improves the quality of human capital and does not require a large investment, which is especially important in times of economic crisis.

Fourth, the sphere of information services develops actively. They are becoming more diverse and accessible to the wider population. First of all, we are talking about financial services, travel, insurance and others. Information services allow people to save time spent on the solution of many problems of everyday business and create new opportunities for the practical implementation of their civil rights and liberties.

All of this contributes to the reduction of social and educational inequality and leads to the development of new needs, creates new motives and labor policies, and ultimately improves the quality of the implementation of human capital. [9]

It is confirmed by the saying of well-known American economist A. Toffler [7] that in the terms of development of the information society the traditional ideas of the quality of life has significantly changed. The quality of modern life is increasingly dependent on the level of consumption of the information products and services, their availability and quality.

V. Conclusion

The study proposes to calculate the human capital sustainable development index (HCSDI) for the assessment of the degree of consistency of particular indicators that are included in the human development index. HCSDI allows not only to assess the level of human capital of the State or the company, but also the degree of balance of its individual components. The reproduction of human capital is significantly affected by the cyclical economic development. During the period of economic growth, total expenditures of the state and companies for the reproduction of human capital should grow at an accelerated rate and be distributed as efficiently as possible, otherwise the consequences of the crisis may be protracted and heavy. In a period of growth the state should create favorable conditions for increased costs of private companies in the human capital.

In this study we investigated the role of the transition to information economy in the reproduction quality of human capital. Telecommunication technologies make education and health care more accessible, as well as open up new opportunities to increase the income. This increases the stability of the development of human capital.

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