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## **Human Capital as a Key Factor of Economic Growth in Crisis**

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**Abstract:**

*The purpose of the article is to determine the role of human capital in overcoming of crisis phenomena in economy by the example of modern Russia. During the research, the authors use such scientific methods as modeling of development of socio-economic systems, factor analysis, analysis of causal connections, systemic and problem analysis, correlation analysis, synthesis, and graphic representation of information. The authors analyze dynamics and connection between Russian economy and innovational activity of Russian enterprises before, during, and after the recent financial crisis and develop an anti-crisis strategy of development of human capital, depending on the phase of economic cycle. As a result, the authors come to the conclusion that overcoming of crisis phenomena in economy is done by innovational activity of enterprises, which is ensured by their human capital.*

**Key words:** *human capital, innovational potential, economic growth, crisis conditions.*

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## **Introduction**

In crisis, economic connections between entrepreneurial structures are broken, which leads to failures of their functioning and slowdown of rates of economic growth. Under the influence of unemployment and reduction of effective demand, economic conditions are further aggravated, which leads to significant reduction of entrepreneurial activity and reduction of living standards of the population.

In Russia, the recent financial crisis has taken the most unfavorable form, as financial failures of the market are accompanied by unfavorable situation in the global energy markets, which constitute the foundation of Russian economy, and implementation of sanctions, which determined additional load on economics and complicates the process of overcoming of the crisis.

Financial mechanisms used for fighting crisis phenomena in economy do not bring the desired results, leading only to slowdown of recession rates and economic growth. Thus, the search for new non-financial methods of overcoming of crisis becomes actual.

Under the conditions of post-industrial economy, one of the most important production factors is human capital, which is the most flexible resource of business in particular and economy on the whole, which determines the use of other resources. Human capital is considered a source of economic growth under the stable economic conditions, but its role in crisis is not studied well.

Based on this, the authors of the article offer a hypothesis that human capital is a key source of innovational potential and a key factor of economic growth in crisis. The purpose of the article is to verify this hypothesis and determine the role of human capital in overcoming the crisis phenomena in economy by the example of modern Russia.

## **Materials and method**

The issues related to study of the notion and sense of human capital and its role in development of entrepreneurial structures are viewed in the works by (Goedhuys and Sleuwaegen, 2016), (Meier et al., 2016), (Benzoni and Chyruk, 2015), (Lim et al., 2015), (Chechina, 2015), etc.

Specifics of formation of innovational potential of enterprises and other economic systems (regional, national, global economy) is reflected in studies by such modern authors as (Karpenko et al., 2015), (Buchmann et al., 2015), (Vasin and Gamidullaeva, 2015), (Ablaev, 2015), (Sultanova, 2012), etc.

Causal connections of economic growth and its meaning for modern economic systems is viewed in materials of research of such scientists as (Urbano and Aparicio, 2016), (Aparicio et al., 2016), (Popkova et al., 2016), (Popkova et al., 2013), etc.

Peculiarities of functioning of economic systems in crisis and methods of overcoming of crisis are viewed in works of such authors as (Hieronymi, 2016), (Bohl et al., 2016), (Peric and Vitezic, 2016), (Capello et al., 2016), (Nadtochey, 2012), etc.

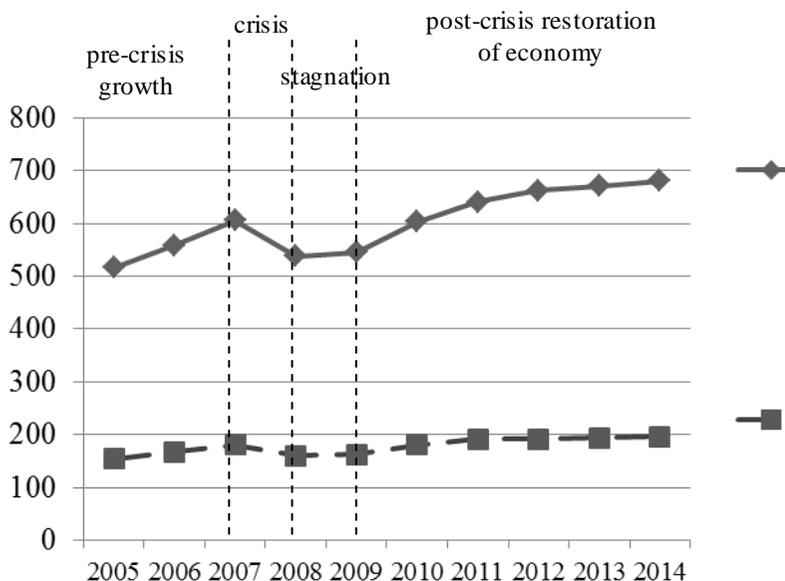
The literature overview on the topic of the research showed that there is a lot of scientific information on separate aspects of this research – human capital, innovational potential, economic growth, and economic crisis.

At that, there is no comprehensive idea of interconnection between these aspects of development of modern economic systems, which determines necessity for complex study of these phenomena – which is performed in this article.

During the research, the authors use such scientific methods as modeling of development of socio-economic systems, factor analysis, analysis of causal connections, systemic and problem analysis, correlation analysis, synthesis, and graphic interpretation of information.

## Results

Let us analyze dynamics and connection between development of Russian economy and innovational activity of Russian enterprises before, during, and after the recent financial crisis (2005-2014) (Fig. 1).



**Figure 1.** Dynamics of Russian GDP and innovational activity of Russian enterprises in 2005-2014

**Source:** (Russia in numbers ..., 2015).

As is seen from Fig. 1, before the 2008 crisis the Russian economy had been developing in a stable way, showing economic growth of 8% per year. At that, innovational activity of Russian enterprises also grew. The crisis came in 2008, which led not only to reduction of growth rates but reduction of the level of Russian GDP and reduction of innovational activity of enterprises.

In 2009, economy stagnated due to lack of stimuli for growth, caused by innovational activity. In 2010, Russian enterprises started implementing innovations into their activities again, which led to level of GDP going back to its pre-crisis level and further growth of its volume and rate of economic growth in 2011-2014.

Deeper economic analysis allowed the authors of this research to determine close connection between the level and rate of Russian GDP and innovational activity of Russian enterprises. Coefficient of correlation of these indicators exceeds 99% for the studied period of time. This shows that in order to overcome crisis phenomena in economy, it's necessary to increase innovational activity of entrepreneurial structures.

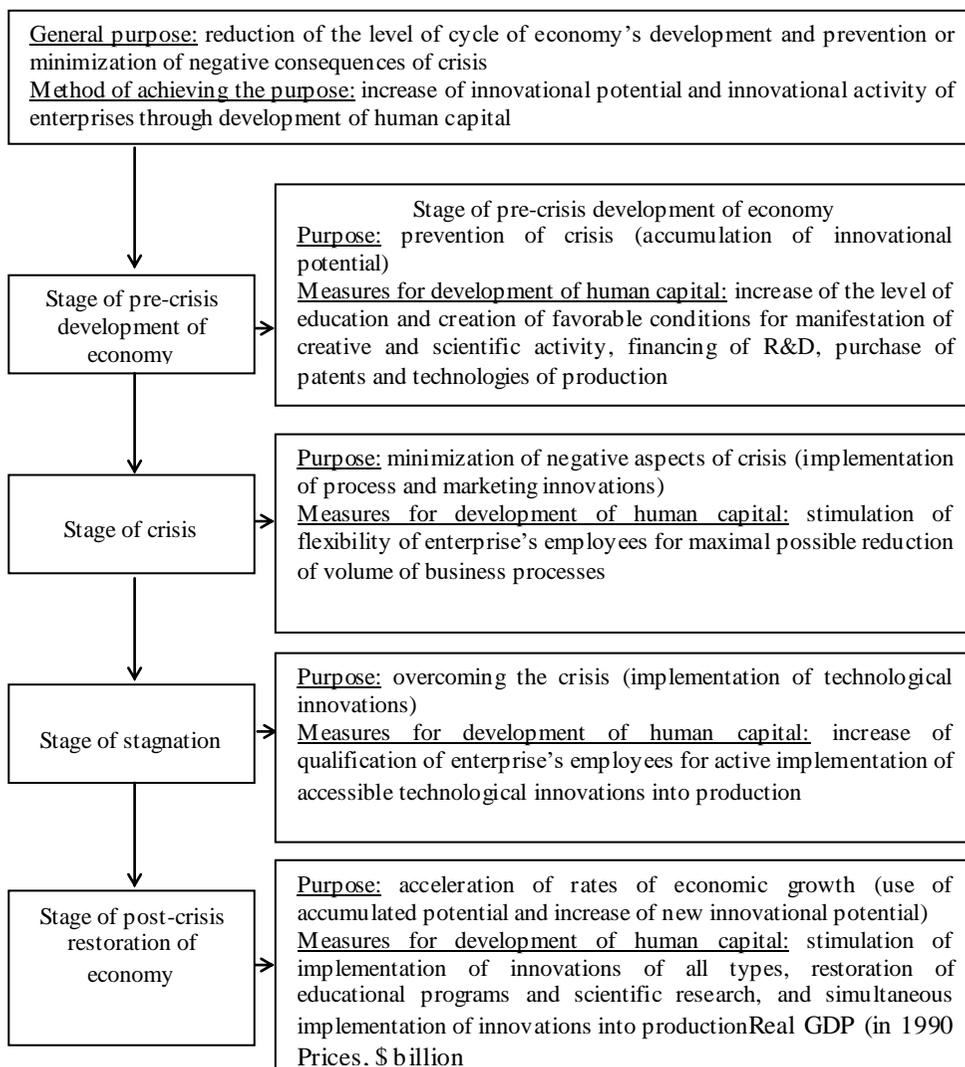
It should be noted that realization of innovational activity of enterprises, especially in crisis, requires possession of significant accumulated potential. In other words, in order to implement innovations into production, it's necessary to have access to leading production technologies.

As under the conditions of crisis, profitability of enterprises and the volume of accessible financial resources are reduced, they are not able to perform scientific research or purchase expensive technologies and latest developments. That's why they use their innovational reserves. Creation of such reserves, which form innovational potential of entrepreneurial structures, requires development of innovations before crisis, under the conditions of economic growth.

Development of innovations could be performed within scientific research of entrepreneurial structures or within R&D institutes with further purchase of final products by enterprises. Despite an important role of technical equipment of scientific laboratories and financing, the most important subject of development of innovations is human capital, as scientific inventions appear in the process of scientific creation.

Implementation of innovations into production activities of entrepreneurial structures is also performed due to human capital, as people develop and control production process. It is not a mere chance that in order to start using new equipment or technology, enterprise's employees take additional training.

That's why it is human capital, not material and financial resources, which is a source of innovational potential of entrepreneurial structures and a key factor of economic growth in crisis. For the purpose of maximization of effectiveness of the use of human capital, this work offers an anti-crisis strategy of development of human capital depending on the stage of economic cycle (Fig. 2).



**Figure 2.** Anti-crisis strategy of development of human capital depending on the stage of economic cycle

**Source:** compiled by the authors.

As is seen from Figure 2, various stages of economic cycle suppose different purposes and offer different measures for development of human capital.

During the stage of pre-crisis growth of economy under the conditions of stability and excess of financial and other resources, it is necessary to accumulate innovational potential for prevention of crisis. This supposes increase of educational level, creation of favorable conditions for manifestation of creative and scientific activity, financing of R&D, and purchase of patents and innovational technologies of production.

During the stage of economic crisis, enterprise cannot perform scientific research and it has to minimize negative aspects of crisis through implementation of process and marketing innovations. This is achieved by means of stimulation of flexibility of enterprise's employees for maximal possible reduction of the volume of business processes.

During the stage of stagnation of economy, enterprise is interested in overcoming of the crisis. This requires implementation of technological innovations, which supposes increase of qualification of enterprise's employees for active implementation of accessible technological innovations into production.

During the stage of post-crisis restoration of economy, enterprise strives for acceleration of rates of economic growth, through use of accumulated potential and increase of new innovational potential. For this purpose, it realizes measures for stimulation of implementation of innovations of all types, restoration of educational programs and scientific research, and simultaneous implementation of innovation into production.

As a result, a general purpose is achieved: reduction of the level of business cycle of economy's development and prevention or minimization of negative consequences of crisis by means of increase of innovational potential and innovational activity of enterprises through development of human capital.

## **Conclusion**

Thus, it is proved by the example of modern Russia that overcoming of crisis phenomena in economy is performed with the help of innovational activity of enterprises, which is provided by their human capital. This proves the offered hypothesis and confirms that human capital is a key factor of economic growth in crisis due to formation and realization of innovational potential of entrepreneurial structures and economy on the whole.

It should be concluded that human capital is the most complex resource due to its high flexibility and uniqueness of each structural element. Unlike material, financial, and other types of capital, human capital is animate, which determines the presence of irrational component in it. That's why successful management of human capital requires individual approach and consideration of large diversity of psychological factors.

A certain limitation of results of the performed research is conduct of analysis by the example of modern Russia and recent financial crisis that began in 2008. That's why cross-country research by the example of various crises and practical approbation of the developed anti-crisis strategy of development of human capital depending on the stage of economic cycle is a perspective direction for further research.

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