

Sustainable development in the face of new strategic challenges

Alexey Ilyukhin*, Svetlana Ponomareva, and Svetlana Ilyukhina

Ural State University of Economics, 620144, 8 Marta Str., 62, Ekaterinburg, Russia

Abstract. The study attempts to assess the economic potential of a large industrial region, the Sverdlovsk Region, as the basis for sustainable development in the new economic realities generated by the global pandemic of 2020 associated with the COVID-19 threats. As a hypothesis of the study, the assumption is considered that the sustainable development of the regional economy in the new conditions is ensured by the accumulated economic potential in the context of the coronary crisis trigger of contradictions. The aim of the study is to study and assess the economic potential of the Sverdlovsk region, the dynamics of its development in the face of new strategic challenges. To assess and predict the economic potential that ensures the sustainable development of the region in the context of the coronavirus-related trigger of contradictions, a study was carried out of relevant scientific publications by leading scientists in this field for 2019-20. The economic potential of the Sverdlovsk region was determined, calculated on the basis of a mathematical model, using statistical data on the following indicators: gross regional product per capita in thousand rubles; average life expectancy of the population in the region; the number of hospital beds and schools per 10 thousand population; the percentage of innovative products in the total volume of the region. Based on the data obtained, an econometric model according to Altman was developed to analyze and forecast the economic potential of the Sverdlovsk region. The calculated, accumulated economic potential undoubtedly provides opportunities for sustainable development even in the face of coronary crisis challenges of the economy. At the same time, it is very important to ensure an increase in the long-term structural rates of economic growth.

1 Introduction

Solving the problem of sustainable development is undoubtedly the main task of mankind in recent decades, while the urgency of ensuring such development is only increasing. The global pandemic in 2020 associated with the threats of COVID-19, despite significant economic and social costs, is a new global factor focusing on achieving conditions for sustainable development. The main criteria for sustainable development according to the UN methodology are balanced and safe socio - economic and territorial - spatial well-being

* Corresponding author: iluhiaa@usue.ru

and social development, the formation of a competitive economy based on institutional economic freedom [1, 2]. It should be emphasized that the solution of the tasks of sustainable development in the current conditions is possible on the basis of the accumulated socio-economic potential, and the losses of society associated with the global pandemic should be considered as an additional challenge, an irritant to the activation of problems associated with ensuring sustainable development.

S. D. Bodrunov emphasizes the noted features of the current situation. "... Changes are expected in the application and development of new generation technologies. New technologies, like sublimated knowledge, create a new view of life, of the world. A new reality "[3]. Structural and technological diversification of the economy based on the accumulated potential will ensure the transition to a new technological order and ensure sustainable development of the economy. Famous Russian economists S.D. Bodrunov, R.S. Greenberg, D.E. Sorokin [4], E.G. Animitsa, J.P. Silin [5, 6, 7], A.I. Tatarkin [8] and others, emphasize that the accumulated potential and nanotechnology will form the basis of the sixth technological order, will have a decisive influence on the established institutions and social structures. The new economic reality requires sustainable development of the economy of the country's territories.

This study attempts to assess the economic potential of a large industrial region, the Sverdlovsk region, as the basis for sustainable development. It is based on the results of previous studies of socio-economic indicators of regional development [9, 10]. The set of baseline indicators (according to the UN methodology) that meet the national priorities of the Russian Federation and the Sverdlovsk region is grouped into four categories: social, economic, environmental and institutional. This is the basis for long-term planning of sustainable socio-economic and environmental development of the Sverdlovsk region.

As a hypothesis of the study, the assumption is considered that the sustainable development of the regional economy in the new conditions is ensured by the accumulated economic potential in the context of the coronary crisis trigger of contradictions. Proceeding from this, the purpose of the study is to study and assess the economic potential of the Sverdlovsk region, the dynamics of its development under the conditions of new strategic exports.

2 Materials and Methods

The sustainable development of the regional economy is influenced by a set of key indicators of the economic, social sphere, and the sphere of training qualified personnel, i.e. its economic potential.

To assess and predict the economic potential that ensures the sustainable development of the region in the context of the coronavirus-related trigger of contradictions, a study was carried out of relevant scientific publications by leading scientists in this field for 2019-20. Analyzed are the dynamic time series of gross regional product (GRP), socially significant indicators of health care and indicators of training qualified personnel for 2002-2016, obtained from official statistics published on the websites of the FSGS [11], the Office of the Federal State Statistics Service for the Sverdlovsk region and Kurgan region [12], the Government of the Sverdlovsk region [13], the Ministry of Health of the Sverdlovsk region [14].

Based on the analysis of dynamic time series, the authors also made attempts to predict the considered indicators for the medium term until 2025. The indicators were calculated using the methods of averages, analysis of time series, a system of average indicators of time series in order to predict them, in total, about 300 statistical tables were processed ... On the basis of the data obtained, an econometric model according to Altman was developed to analyze and forecast the economic potential of the Sverdlovsk region [15].

3 Results and Discussion

It is rather difficult to analyze the state of the Russian economy at the stage of exacerbation of the current coronavirus situation, but publications have already appeared in scientific journals, the authors of which are trying to analyze the dynamics of production, considering it in all dimensions: macroeconomic, sectoral and regional.

The stagnation of the Russian economy in recent years has actualized the discussion on the ways of sustainable development and long-term economic growth. But the coronavirus pandemic has radically changed the economic agenda, putting operational, short-term policies first.

Scientific publications have appeared in the economic literature, the authors of which are trying to answer the questions posed [16, 17, 18].

One of the most debated questions is whether the previous experience of the recovery growth of the Russian economy can help determine the policy of overcoming the crisis today. Economists note that uncertainty about the future development of the pandemic and the largely non-economic nature of the current crisis make it difficult to use previous experience in assessing the speed of recovery and the impact of government anti-crisis measures on economic dynamics [17, 18].

In our opinion, the approach remains fruitful - to use the experience of past shocks (crises), but taking into account the specifics of the current situation. Indeed, historical analogies can be used to identify sources of sustainable development and long-term economic growth that are fairly inert and do not change for a long time. It is important to take into account that the structure of sources of long-term economic growth, of course, does not change overnight, but over time it is also gradually transformed. This takes into account that long-term sources of economic growth are determined by both internal, endogenous factors (structure of the economy, competitive advantages) and external, exogenous (state of the world economy). In our opinion, when pursuing an anti-crisis policy, it is advisable to use existing sources and ways to stimulate sustainable economic development, as well as to propose new ones that correspond to the current situation.

Thus, the current socio-economic situation should be regarded as an additional factor of creative destruction, a kind of coronary crisis trigger of contradictions. The construction of new concepts and models of sustainable development in the current conditions is necessary on the basis of the rational use of the accumulated economic potential.

The socio-economic situation in a large industrial region, the Sverdlovsk Region, is similar in its main parameters to the all-Russian one. According to the authors, the socio-economic situation in the region can be extrapolated to the entire Russian economy. Therefore, the study assessed the accumulated economic potential of the region as the basis for sustainable growth. Monitoring of statistical data for 2014-2019 was carried out, on the main socio-economic indicators of the Sverdlovsk region, provided by the portals of official state statistics.

In order to assess the potential for sustainable development of the region, we calculated the economic potential of the Sverdlovsk region K2, based on a mathematical model, using statistical data for the following indicators: gross regional product per capita in thousand rubles; average life expectancy of the population in the region; the number of hospital beds and schools per 10 thousand population; the percentage of output of innovative products in the total volume of production of the region, based on the methodology proposed by V.A. Chereshev, A.I. Tatarin, S.Yu. Glazyev [19]. Calculation data is grouped in the diagram

(Fig.1).

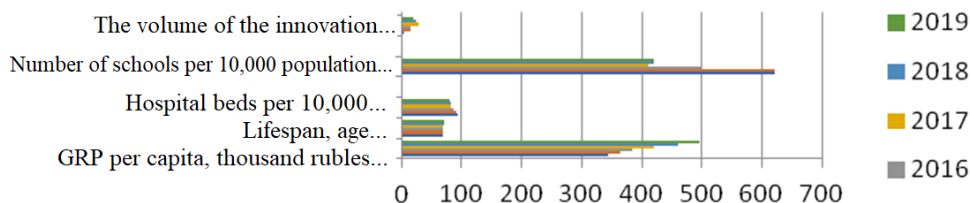


Fig. 1. Values of indicators for assessing the economic potential of the Sverdlovsk region for 2014-2019.

To calculate the coefficient K_2 , we use the economic potential of the region, calculated on the basis of a mathematical model, using statistical data for all indicators [19]. Mathematical model according to Altman [15] for calculating the economic potential of the Sverdlovsk region:

$$K_2 = 1.2 x_1 + 1.4 x_2 + 3.3 x_3 + 0.6 x_4 + x_5$$

where x_1 - Gross Regional Product;

x_2 - Lifespan;

x_3 - Number of hospital beds per 10,000 population;

x_4 - Number of schools per 10,000 population;

x_5 - The volume of production of innovative products in the total volume of products.

Let's calculate K_2 for three years:

$$2017: K_2 = 505,32 + 97,8 + 275,22 + 246,48 + 20,5 = 1145$$

$$2018: K_2 = 551,77 + 98 + 269,28 + 246,48 + 20,5 = 1186$$

$$2019: K_2 = 594,138 + 99,68 + 265,65 + 252 + 20,5 = 1231$$

Thus, the coefficient of economic attractiveness (economic potential) of the Sverdlovsk region is increasing every year. In 2019, it amounted to 1231 points, which is 45 points more than in 2018, and 86 points more than in 2016.

The Sverdlovsk Region has a huge industrial potential, which is not being realized due to insufficient investment. The authors analyzed the dynamics of investments in fixed assets in the Sverdlovsk region in 2018-2019, billion rubles. and a forecast was made until 2025 (Fig. 2)

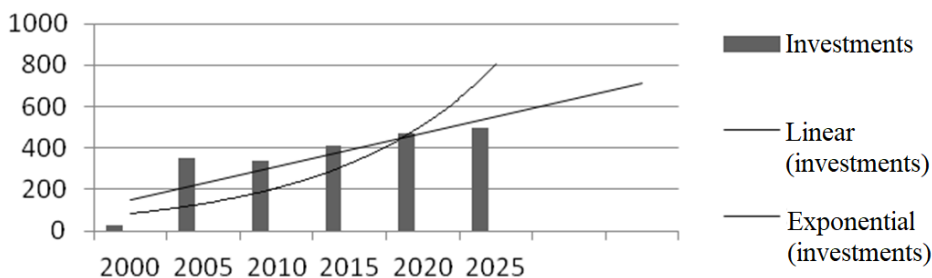


Fig. 2 Volume of investments in fixed assets in the Sverdlovsk region in 2018-2019, billion rubles and forecast up to 2025.

Despite the decrease in investments in fixed assets in 2019 by 2.3%, there is an increase in equity capital by 17%, and the region confidently ranks 5th among 85 constituent entities of the Russian Federation for this indicator. Among other areas of investment policy in the Sverdlovsk region, it is envisaged "to develop a system of tax incentives, as well as preferential conditions for the use of land and other natural resources" [20]. This,

undoubtedly, in combination with the current targeted programs will have a beneficial effect on the quality of life of the region's population and contribute to the sustainable economic development of the territory. The development of the agro-industrial complex of the Sverdlovsk region can become a driver of economic growth, if the share of labor resources in rural areas is increased, while using redirected flows of migrants.

4 Conclusions

The accumulated economic potential undoubtedly provides opportunities for sustainable development even in the face of coronary crisis challenges of the economy. The conducted research allows us to focus on the need to increase the long-term structural rates of sustainable development. Their implementation can begin as early as 2021. It is necessary to digitize all spheres of the economy and public administration, this will ensure labor productivity comparable to developed countries.

Thus, the study carried out fully confirms the working hypothesis of the study: the sustainable development of the regional economy in the new conditions is ensured by the accumulated economic potential in the context of the coronary crisis trigger of contradictions. All other things being equal, it is this fact that is an active stimulus for sustainable development and economic growth. The economic difficulties caused by the global pandemic should become a factor of creative destruction, this provision should underlie all measures for the development of state programs for sustainable development.

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