Evaluation of industry tendencies in Uzbekistan

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The article proposes a method for assessing trends in industrial development in Uzbekistan. The least-squares method of the regression model was used to estimate industry development trends. Development trends are assessed based on the index of change in the final and theoretical values of industrial production.

Introduction

At the current stage of formation of innovative economy in Uzbekistan, improvement of mechanisms of industrial potential, including constant monitoring of the level of economic potential of regions and industries, adoption of modernization programs aimed at increasing the industrial potential and development of targeted strategies in this area are important.

The Address of the President of the Republic of Uzbekistan Shavkat Mirziyoev to the Oliy Majlis of the Republic of Uzbekistan on December 22, 2018 - the formation of the state's renewal program, the training of new generation of personnel, the effective use of innovation and investment, the new class of investors are very important. This requires a strong national idea and a national program for technological development of Uzbekistan and modernization of the domestic market. This program should allow Uzbekistan to be among the most developed countries in the world " [1].

Implementation of these tasks is, first of all, the targeting of targeted strategies aimed at increasing the volume of industrial production in the regions of the country, efficient use of the production potential of industrial enterprises.

Industrial sector development is important for the economy of Uzbekistan, accounting for 27.2% of GDP, 14% of total employment in the economy and 40% of investments in fixed assets by economic activity. The State Statistics Committee of the Republic of Uzbekistan has published a report on the positive impact of industrial production on absolute GDP growth in 2018 by 1.4 pp. was rated at [2].

Taking into account these aspects, one of the most urgent issues is the development of targeted strategies to increase the industrial potential on the basis of in-depth analysis of trends in the development of the industrial potential of the republic and identification of the factors influencing its sustainable development.

Literature review

There are several interpretations of the concept of "economic potential" in the scientific literature. Economic potential as one of the main categories of the economy reflects the state and opportunities of development at different levels of economic activity. In macroeconomics, economic potential is understood as a common opportunity of society, such as meeting the demand for goods and services and making optimal use of available resources during market relations [3].

The term "power" comes from the Latin word potentia, which means "opportunity, power." In a

number of economic dictionaries, the concept of "capacity" is defined as "a set of tools," "available resources, a means, a resource," [4].

In the regional economy, two approaches are identified in the concept of "economic potential of the region": maximum availability (probability) of the region's resources for a certain period of time and maximum satisfaction of needs [5]. The economic potential of the region is the state of the total volume of real and reserve resources that maximize domestic and external needs.

In general, the country's production capacity is the ability to provide long-term sustainable development with effective and efficient use of available resources, and the ability to formulate, identify, and satisfy consumer demand for industrial products in its interactions with the external environment.

The development of a regional development strategy is the mobilization of resources into targeted activities, the formation of appropriate infrastructure and the identification of development directions through the development of appropriate measures. The development of a region's long-term strategy and decision-making must be based on a scientific basis and consider factors that have a positive impact on economic growth.

Scientists of our country have done a number of studies to assess the industrial potential. Rasulov G.S. The implementation of industrial production capacity by taking into account the peculiarities of industries is evaluated on the basis of statistical analysis methods [6]. The results of the study are based on the dependence of the industrial potential of the industries on the volume of internal and external demand for products in these sector Analysis of production capacity of the food industry in the Republic of Uzbekistan and its analysis on the basis of regionalization by region, as well as suggestions and recommendations on increasing food production capacity developed by Umarov I.Yu.[7]

Estimation of industrial production in the regions of the Republic of Uzbekistan, share dynamics, growth dynamics, per capita industrial production, growth dynamics using indexed methods for assessing the industrial potential of the industry based on inter-regional and national indicators are introduced by Salimov B.B. [8]

The role of the industrial sector of Uzbekistan in the national economy, its sustainable development, innovative activity and effectiveness of its management estimated by Mamadjonov D. G. [9] in his research, the potential of the regions for agricultural production estimated by Tashmatov based on statistical analysis.

Kurbanov J. Q. tried to find out in his research that the industry is a technical and technological basis for increasing labor productivity and increasing the competitiveness of the national economy. Industrial capacity building is based on changes in factors such as energy intensity, CO_2 emissions and foreign investments [11].

Scientists in our country have not done enough research on the use of economic and mathematical models in assessing the industrial potential of the industry.

There is an opportunity to point out the most important factors that determine the productivity of the industry and the degree of impact on the industry by assessing the potential of industrial production based on multivariate correlation and regression analysis methods.

Assessment trends of industry development in a number of areas have been investigated by Khomidov S. O. His research highlights six stages of complex industry development trends (global, global, macro-level, country), region-level, region-level, micro-level (enterprise), and nanodocumentary (products). . Systematized peculiarities, processes and quantitative methods of research of industrial sector development.

. A number of scientific studies have been carried out by foreign scientists on the use of correlation and regression methods in assessing the industrial potential of the industry. In particular, Tarasov's assessment of the impact of comparable and real product production on resource provision and the factors that shaped them to increase production capacity was analyzed by Tarasov P. S.

Research methodology

In assessing the industrial potential of the industry, it is advisable to develop a valuation technique first. The task is to classify the factors that create and affect industrial capacity. In our classification, we believe that it is desirable to adopt industrial products manufactured in the country, region or sector, or enterprise, as a continuous variable.

The following figure shows the stages of assessing the industrial potential of the industry (Figure 1).

Figure 1 **Stages of industrial production capacity calculation**

Figure 1.

Calculation of industrial production capacity is made at macro level (country). It uses data on industrial development of the Republic for 2005-2017. It is advisable to use SPSS Statistical and exell programs to calculate correlation and regression analysis results. The least squares method of regression analysis is used to evaluate industrial potential.

Analysis and Results

The Republic of Uzbekistan, selected as the dependent variable in assessing the industrial production capacity, is defined as the industrial output (Y; billion soums) and the independent

variables - average industrial employment (X_1; thousand people), investment in industry (X_2; billion). , Changes in the average wage (X3; thousand UZS) for 2005-2017, based on the data from the State Statistics Committee of the Republic of Uzbekistan, in Table 1.

Table 1 **Selected parameters for the model**

years	Y	X 1	X 2	* X 3
2005	11028,6	616,7	1032,4	92,8
2006	14640,3	614,7	1384,6	128,5
2007	18447,6	618,3	2223,2	184,4
2008	23848,0	600,4	3293,8	199,9
2009	28387,3	579,0	3556,9	397,5
2010	38119,0	611,6	4659,9	537,9
2011	47587,1	644,2	6070,3	680,7
2012	57552,5	670,5	7794	862,7
2013	70634,8	680,3	9813,4	1088,8
2014	84011,6	682,4	13164,5	1280,4
2015	97598,2	685,1	15047,3	1549,4
2016	111869,4	702,8	16165,5	1 863,8
2017	144185,3	1825,2	26630,9	2091,7

Table 1.

For comparison with the minimum wage, 2016-2017 was calculated as a basis for comparison with 2005-2015.

The data presented in Table-1 is a linear equation of the linear function using the regression equation using "Excel". The essence of the least squares method is to minimize the squares constraint between calculated and observed sizes. The calculated values are found by the chosen regression equation. The smaller the difference between the actual values and the calculated indices, the clearer the function based on the regression equation [13].

Table 2 Results of statistical Regression statistics by Excel

Statistics of regression analysis	
Multiple R	0,99
R-squared	0,99
Normalized R-squared	0,99
Standard error	1314,6
Observations	13

Table 2.

Factors	coefficient	Standard error	t- statistics	P - value
Y	7848,62	2278,60	3,44	0,0073
X1	-1,25	4,15	-0,30	0,7701
X2	2,40	0,57	4,21	0,0022
X3	35,80	4,91	7,29	0,0000

Table 3.

Based on the results, we construct the following multivariate regression function:

(1)

Here ,

ΔY – industrial production;

X1 - average number of employed in industry;

X2 - investment in industry;

X3 - average salary;

Increased Y (industry output), which depends on the resulting function (1), has a positive effect on the average number of employees in the industry, on investments in the industry, and on average wages. According to the results of the argument, the increase in industrial potential has a positive effect on the average wage in the industry, which is an increase of industrial production by 35.8 units, as a result of an increase in the average wage by one unit (one thousand sums). The coefficient of determination is R2 = 0.99, which means that the coefficients calculated on the basis of the model are based on a 99% probability.

The function derived from the regression analysis reflects the industrial potential of the industry as a "theoretical result". The actual values of the industrial potential of the Republic of Uzbekistan and the correlation between the "theoretical results" obtained from the regression reflect the changes in the industrial production potential (2). If IChS ≥ 1 means that the industrial potential of the Republic is effectively used, and if ICC ≤ 1, it means that the production capacity of the industry is ineffective.

IChSi = Y / ΔY (2)

Here,

IChSi - index of production capacity utilization;

Y - industrial production, bln

YY - theoretical result of industrial production;

We calculate the "theoretical results" and the index of utilization of the production potential in Table 3, calculated on the basis of the function obtained from the analysis of the actual production volume and regression analysis of industrial output in the republic.

Table 3 **Assessment of the level of industrial potential utilization in the Republic of Uzbekistan for 2005-2017**

Years	Industrial production, bln. Soums (Y)	Theoretical output of industrial products (ΔY)	Production Capacity Index (CPI)
2005 й.	11028,6	12871,93	0,857
2006 й.	14640,3	14996,14	0,976
2007 й.	18447,6	19001,65	0,971
2008 й.	23848	22143,61	1,077
2009 й.	28387,3	29874,35	0,950
2010 й.	38119	37501,88	1,016
2011 й.	47587,1	45951,71	1,036
2012 й.	57552,5	56563,25	1,017
2013 й.	70634,8	69482,49	1,017
2014 й.	84011,6	84366,5	0,996
2015 й.	97598,2	98503,13	0,991

| 2016 й. | 111869,4 | 112414,6 | 0,995 |
| 2017 й. | 144185,3 | 144238,5 | 1,000 |

Table 4.

The results of calculating the industrial production capacity index of the Republic of Uzbekistan for 2005-2017 show that in 2005-2012, it adopted at least one value. In 2008, the productive potential of the industry was effectively used. The 2010–2013 industrial productivity utilization index was highly effective, with the adoption of high values. In 2014-2016, there was a downward trend, and in 2017, the production capacity was effectively used. There are no significant differences in the overall trend in the use of industrial potential of the industry. This circumstance underscores the need to further improve the efficiency of the efforts undertaken in the Republic to effectively use the production potential.

In our opinion, it is possible to use the method of calculating the index of production capacity not only by comparative analysis of the level of industrial production utilization across the country, but also in the regions. This approach should also be used in the development of key industry development strategies and industrial capacity building.

Conclusions and Suggestions

It is advisable to use the methodological approaches outlined in the strategy of balanced development and effective placement of the industry of the regions, and to increase the industrial potential of the industry. The effective use of the industrial potential of the Republic of Uzbekistan means that it is necessary to take into account the existing opportunities and factors affecting the growth of production potential. Accordingly, the use of the proposed model in defining targeted industrial development projects and strategies in the Republic will increase the chances of achieving a balanced industrial development in the regions, and the targeted use of productive forces by region.

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