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ANALYSIS AND FORECASTING OF THE ACTIVITY OF INDUSTRIAL ENTERPRISES IN KASHKADARYA REGION USING TREND MODELS

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ABSTRACT

Based on trend models, taking into account trends over the years, the socio-economic development of industrial enterprises in our country during the pandemic was analyzed and forecast options were developed. An analysis of the activities of industrial enterprises based on trend models and conclusions and proposals for improving the efficiency of modern management are given.

In the context of the world pandemic, special attention is paid to modern research, which is devoted to the restoration of the position of industrial enterprises in the socio-economic development of their current state. Increasing its competitiveness on the basis of attracting new opportunities for the effective use of the potential of industrial enterprises in the environment of the digital economy is considered one of the pressing issues today.

The trends observed in the industry formed the basis for comprehensive reforms aimed at developing industrial enterprises in Uzbekistan with high production as a strategic sector of the national economy, and in 2021, 456,056.1 billion sums of industrial production were produced in the Republic of Uzbekistan, which increased by 23.7% compared to last year, creating a favorable institutional and socio-economic environment. In 2020, the global impact of the pandemic caused the industrial industry to face an economic crisis, and also laid the foundation for a sharply competitive environment in the further development trends of the industry. Today, " in recent years, systemic reforms have been carried out in our country to create a favorable investment climate, to protect the rights and legitimate interests of private property owners. At the same time, the delay in the transition to market mechanisms in certain sectors and large enterprises, where the share of the state is maintained, prevents the establishment of the production of new types of competitive products, the introduction of advanced technologies, increasing labor productivity, the creation of new jobs with the active involvement of private capital" was defined as the priority.

The main goal of supplying finished products with added value to the world market is that if the deep processing of raw materials is put on the market in a ready-to-eat state, first of all, our people will be

provided with work, the value of our money will increase, our markets will be saturated with various products and, of course, Taking this into account, practical measures aimed at ensuring the further development of this sphere are consistently implemented in our country.

According to World Statistics(UNIDO), most of the economic success in developing and newly industrialized countries is explained by profound structural changes in the industry, especially in the refining industry. In particular, 44.6% of the value added in the world processing industry and 34.6% of export products are contributed by these countries. According to research, the industrial network also occupies an important place in the creation of jobs. In particular, the creation of one workplace in the processing industry leads to the creation of two or three jobs in other industries.

Today, the development of the industrial network also occupies an important place in the economy of our country. In particular, 25.7% of the added value of sectors in the GDP of the Republic, 13.6% of total employment in the economy, and 39.4% of investments in fixed capital by types of economic activity correspond to the contribution of this sector.

Issues of modeling and forecasting industrial production processes, multi-criterion optimization of production, regional development of industry, and classification of its multidimensional dynamics L.V.Kantorovich, V.N.Burkov, V.K.Kontorovich, N.G.Andronnikova, V.A.It occupied a wide space from the scientific research of the kolemaevs.

Like other countries, the issues of modeling socio-economic processes are the subject of the scientific interests of economists of the Republic in this regard. In particular, the famous economist scientists of our country V.Q.Qabulav, S.S.Gulyamov, B.Yu.Khadiev, B.T.Salimov, X.S.In the scientific work of the Mukhitdinovs, the issues of modeling and forecasting production, modeling socio-economic processes in conditions of complex environmental situations, forecasting the development trends of small businesses, factors and econometric models of sustainable socio-economic growth, modeling the formation and development of Agriculture and the rural labor market were studied in depth and extensively.

The above-mentioned scientific research of scientists has its place and significance within the scientific work done in this direction. However, each problem requires a unique solution for a specific time and space.

Speaking about the use of econometric models in the management of the development of industrial enterprises in our country, we are referring to the creation of an interactive map of the country and its unified database of available resources of tourist regions, a single system that includes their production potential. At the same time, industrial enterprises in Uzbekistan should openly use the possibility of production and constantly update their quantity and quality level. This situation leads to the development of industrial enterprises as an effective means of production efficiency and the production potential of certain regions of Uzbekistan. The natural resources of the Kashkadarya region can serve as a source of rapid, complete, and reliable information about the production potential of the region. This makes it possible to effectively solve many problems in the management of industrial enterprises and increase

production volumes, increase competitiveness and increase the flow of foreign investors. The availability of Natural Resources in the Kashkadarya region is to create convenient, reliable, and effective services for managing the production potential of the region.

In accordance with the purpose of determining the following tasks in solving the problems arising in the management and development of the activities of industrial enterprises in the territory of the Kashkadarya region:

- Distribution of territorial objects based on ecological maps taking into account the natural and climatic conditions of the territory;

- Identification, classification, and certification of environmental conditions in the territory, while maintaining them well;

- Placement of the infrastructure of industrial enterprises in the territory according to the availability of Natural Resources;

- The correct Organization of the advertising service in increasing the volume of production at industrial enterprises in the territory, as well as in the development of quality indicators.

Analyzing the volume of products of the total industrial enterprises produced in the regions of our country in 2021, Kashkadarya region has a total volume of industrial products produced in 2021, totaling 18771.9 billion sums, 8th place in 14 regions by this indicator, 5th place in 2000 by Regions, which means that in the development of industrial enterprises it is necessary to carry out

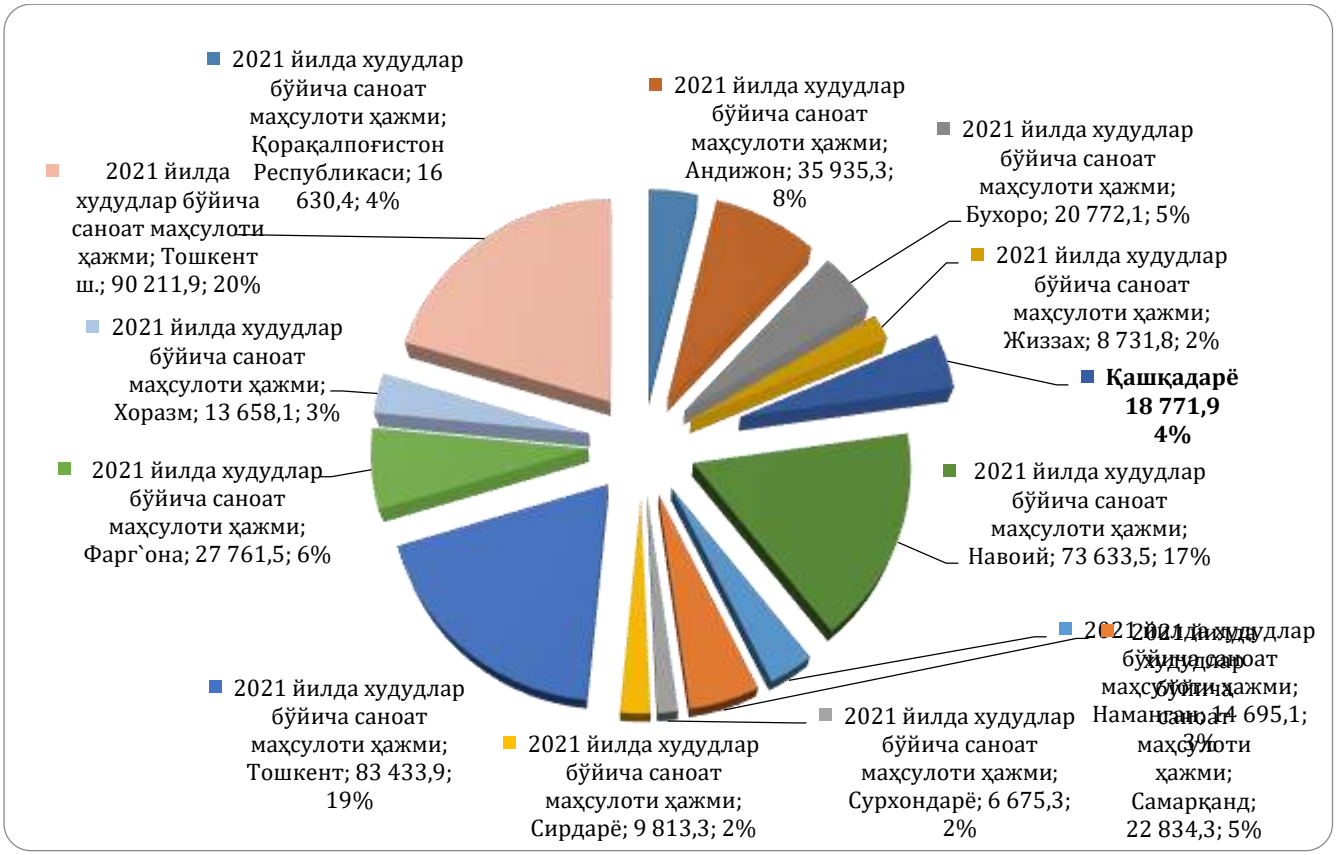

Figure 1. The volume of industrial production produced by regions in 2021.

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If we analyze the volume of products of industrial enterprises produced in 2021 in the regions of our country by population, then Kashkadarya region in 2021 the volume of industrial products produced per capita was 5567.2 thousand sums, with this indicator 12th in 14 regions, while in 2000 it was 7th in regions (figure 2.)

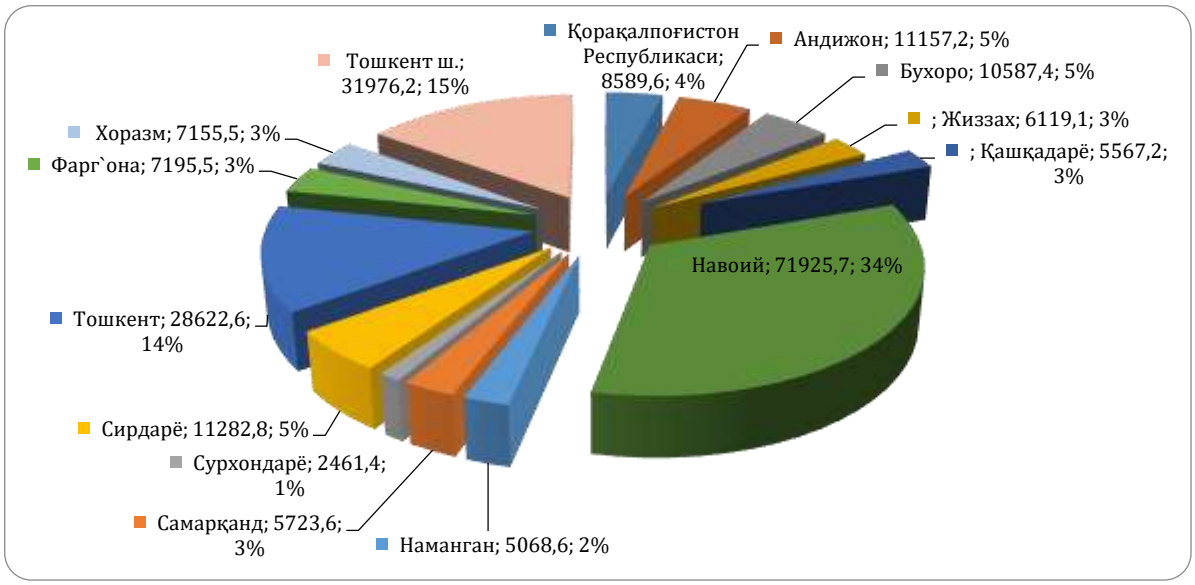

Figure 2. The volume of industrial output per capita by region in 2021.

Table 1

Industrial output by Kashkadarya region and industrial output per capita

	The volume of industrial production in Kashkadarya region (billion. in sum)	Industrial production per capita in Kashkadarya region (in thousand sums)
2000	159,8	73
2001	240,8	107,8
2002	377,9	166,2
2003	564,1	243,6
2004	805,3	341,6
2005	1436,3	598,6
2006	2018,2	826,7
2007	2446,4	984,1
2008	3306,6	1303,6
2009	4461,6	1722,8
2010	4957,5	1857,1
2011	5043,6	1833,8
2012	6076,4	2166,7
2013	6849,4	2392,1
2014	7194,7	2458
2015	8721,9	2914,8
2016	9632,2	3150,7

2017	7351,2	3509,9
2018	9992,0	4568,0
2019	12562,6	6270,9
2020	14612,3	4417,4
2021	18771,9	5567,2

If we analyze the products of industrial enterprises produced in the territory of the Kashkadarya region based on the trends of change for 2000-2021 (Table 1), the volume of industrial products by region increased by 117.5 times in 2021 compared to 2000, and by 1.28 times compared to 2020. Analyzing the volume of industrial output produced per capita, we can see that in 2021 it increased by 76.3 times compared to 2000, and by 1.26 times compared to 2020. But the above has a fairly low indicator of the production of industrial products, according to which it was analyzed by Regions.

In Table 1, we have built several trend models based on the trends of change from 2000-2021 and selected the most optimal trend models (figure 3)

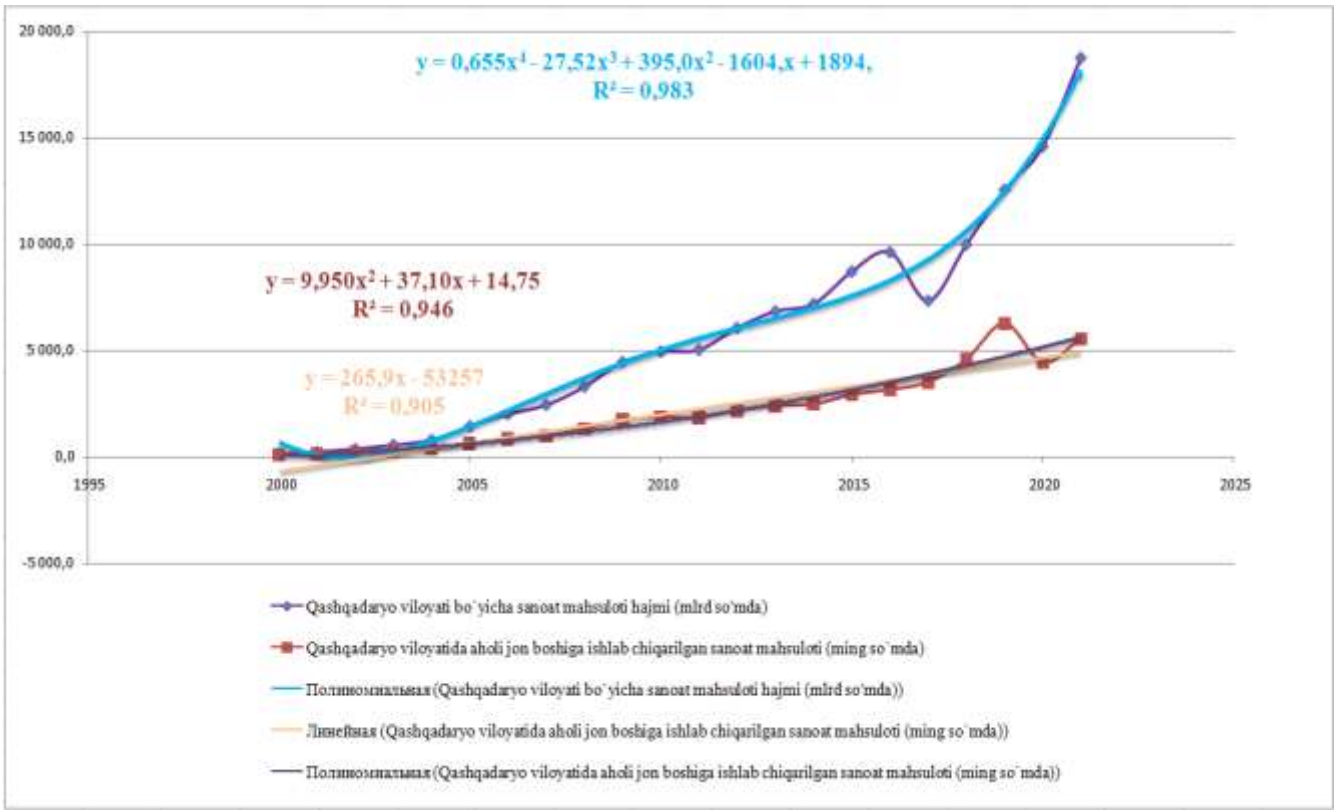

Figure 3. Graphs and trend models of the volume of products of industrial enterprises produced in total and per capita production in the territory of the Kashkadarya region.

We selected the following trend Model in terms of the volume of products of industrial enterprises produced in total in the territory of the Kashkadarya region, shown in Figure 3:

$$y=0,655t^4-27,52t^3+395,0t^2-1604,0t+1894,0$$
$$R^2 = 0,983 \quad (1)$$

and we selected the following trend Model in terms of the volume of products of industrial enterprises produced by the population of the Kashkadarya region:

$$y=9,950t^2+37,10t+14,75$$
$$R^2 = 0,946 \quad (2)$$

Based on the built-in trend models, a forecast of trends for changes in the volume of products of industrial enterprises produced in total in the territory of the Kashkadarya region and the volume of products of industrial enterprises produced per capita for 2022-2026 was carried out (Table 2).

As you can see in Table 2, based on this, the volume of products of industrial enterprises produced in the Kashkadarya region by the end of 2022 was projected to increase by 1.19 times compared to 2021, and by 2026 by 2.82 times, and the volume of products of industrial enterprises produced per capita by the end of 2022 by 1.10 times

Table 2.

The volume of industrial output produced by Kashkadarya region and the forecast of industrial output produced per capita

Years	Volume of industrial production in Kashkadarya region (in billion soums)	Industrial production per capita in Kashkadarya region (in thousand rubles)
2022	22417,02	6131,6
2023	27794,8	6636,35
2024	34528,38	7161
2025	42837,76	7705,55
2026	52958,7	8270

Summary and suggestions

In the Kashkadarya region, in the conditions of the digital economy, it is necessary to study the specific scientific and methodological foundations of the activities of industrial enterprises in the management system, determine the main areas of activity in this area, create an effective management system in the network, as well as form management activities and structure, develop a mechanism for effective management This serves to increase the volume of production and bring the quality indicator to a high level.

Based on the production potential of the territory, increasing the effectiveness of the efficiency mechanism in the development of industrial enterprises, the effective organization of the organizational and economic mechanism of the activities of enterprises should be considered as the main direction in ensuring economic development.

The organizational and economic mechanism for the development of marketing activities of industrial enterprises requires their activities in an effective system, covering management sub-sectors, management functions, management assets, communication system, management methods, management goals, and objectives. All

elements of organizational and economic mechanics are inextricably linked with each other, the complementarity of which is the main criterion in their effective functioning in the market.

References:

1. Decree of the president of the Republic of Uzbekistan dated October 27, 2020 PF-6096 "on measures to accelerate the reform of enterprises with state participation and to privatize state assets" / / https://lex.uz/ru/
2. Industrial Development Report 2018. Demand for Manufacturing: Driving Inclusive and Sustainable Industrial Development. UNIDO. Vienna, 2017. pp. 158-171.
3. Lavopa A. and Szirmai A. (2012). Industrialization, Employment and Poverty, UNO-MERIT Working Paper Series 2012-081. Maastricht, the Netherlands: United Nations University, Maastricht Economic and Social Research Institute on Innovation and Technology.
4. Kontorovich V.K. Vzaimosvyaz realnogo kursa rublya I loudspeaker promishlennogo proizvodstva V Rossii / / Economicheskiy magazine VSHE. № 3. 2001.
5. Andronnikova N.G., Barkalov S.A., Burkov V.N., Kotenko A.M. Model I Method optimizasii regionalnix programm razvitiya. - M.: IPO RAN, 2001.
6. Kalemaev V.A. Matematicheskaya economy. - M.: Yuniti, 2005.
7. Gulyamov S.S. Problem modelirovaniya razvitiya territorialno-promishlennix kompleksov. Diss. na saisk. uchen. Step. dokt. Egon. nook. - M. 1974.
8. Khadiev B.Yu. Econometric modeling of the development of entrepreneurship in the economy of Uzbekistan.: Iqt. science. dock. dis... Abstract. - T.: TDIO, 2000.
9. Salimov B.T. Modelirovanie ispolzovaniya I razvitiya proizvodstvennogo potential regiona. - T.: Teacher, 1995.
10. X.S.Mukhitdinov, A.N.Rakhimov, Sh.X.Mukhitdinov. The forecast for the development of the public services sector. Solid State Technology, December 2020, Vol 63, No. 6 (2020) //http://solidstatetechnology. us / index. php/ who/ article/ view/ 8013.
11. Rakhimov A. N. Econometric modeling of the development of educational services to the population of Kashkadarya region //academia: an INTERNATIONAL MULTIDISCIPLINARY RESEARCH JOURNAL. – 2021. - T. 11. – №. 2. - S. 1305-1312.
12. Directory of the Statistical Committee of the Republic of Uzbekistan. stat.uz.