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	JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350

SOI: 1.1/TAS DOI: 10.15863/TAS
International Scientific Journal
Theoretical & Applied Science
p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)
Year: 2022 **Issue:** 02 **Volume:** 106
Published: 16.02.2022 **http://T-Science.org**

QR – Issue QR – Article

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ANALYSIS OF THE STABILITY OF INDUSTRIAL DEVELOPMENT OF THE SAMARKAND REGION AND THE DYNAMICS OF FACTORS INFLUENCING IT

Abstract: *This article provides an econometric analysis of the development trend of industrial potential and the stability of the dynamics of the factors influencing it for Samarkand region and districts. At the same time, the dynamics of the impact of the time factor on the main factors affecting the industry were analyzed.*

Key words: *Econometrics, trend model, industry, regional analysis, elasticity.*
Language: *English*
Citation: Yakhshilikov, J. J. (2022). Analysis of the stability of industrial development of the Samarkand region and the dynamics of factors influencing it. *ISJ Theoretical & Applied Science, 02 (106),* 214-222.
Soi: http://s-o-i.org/1.1/TAS-02-106-26 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2022.02.106.26
Scopus ASCC: *2000.*

Introduction

The traditional development of the region is explained by the growth of the gross domestic product (GDP) of the region. The economic development of a region is the process of managing various resources available to local authorities and all components of society, and creating new jobs, forming a partnership model to stimulate the development of economic activity in the region. An indicator of development success is the insignificance of income inequality between economic growth, economic structure and population, between regions and sectors[1].

In other words, the development of regional economic development is usually directed at the expense of economic growth efforts. Economic growth is associated with an increase in the production of goods and services. The main determinant of regional economic growth is the demand for these goods and services in other regions for local resources to produce regional goods, as this creates employment opportunities in the region [2].

Indeed, if external demand for a unique product in a certain region is high, this will lead to the development of the creation or production of this product in this region. As a result, an increase in the volume of added value in industry in the region and the creation of new jobs will lead to the growth of the region's economy and an increase in the standard of living.

On the other hand, one of the important factors determining the success of regional development is the planning process, because economic development cannot be solved with the help of a single market mechanism. Planning can be described as an ongoing process involving decisions about the use of various alternative resources to achieve specific goals in the future [3].

Regional development planning cannot be carried out by one or more network enterprises. This is due to the fact that they do not have a database of not only other network enterprises, but also their own network enterprises. Planning for regional development requires a large database and its processing, as well as scientific approaches.

RESEARCH METHODOLOGY

On the analysis of factors determining industrial development, Z. Maroof, S. Hussain, M. Jawad, M. Nazlar [4] and G.A. Fuentes Barrera, X.G. Durany, J.R. Pons, J.G. Guerrero Erazolar [5] studied global trends in industrial development.

M. Shamsuzzaman, A. Shamsuzzoha, A. Maged, S. Haridy, H. Bashir, A. Karim [6], A. Montazeri, M.H. Ansarizadeh and M.M. Arefilar [7] has studied the methods of statistical observation of industrial

production processes and the improvement of data-based statistical approaches for monitoring and analysis.

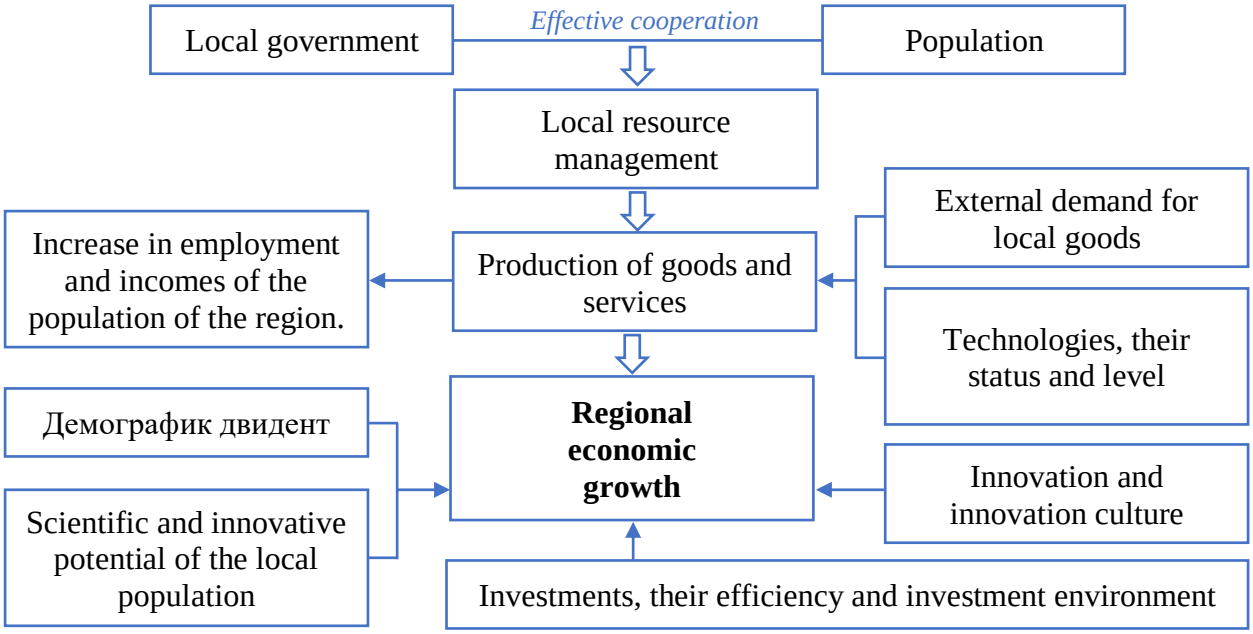
According to some classical economists, notably Adam Smith, David Ricardo, Thomas Robert Malthus and John Stuart Mill, as well as neoclassical economists Robert Solow and Trevor Swan, four factors influence economic growth [8].

1. Population.
2. The number of fixed assets.
3. Land area and natural resources.
4. The level of technology used.

Local resources and their management, as well as factors influencing them, are important for economic growth and sustainable development of the territory as a whole. However, the efficiency of management and use of local resources also often depends on the effective interaction of local government and the population of the territory (investor).

Thus, the factors influencing the economic growth of the region, such as effective cooperation between local government and the population, demographic dividends, scientific and innovative potential of the local population, external demand for local goods, technologies and their status, the level of innovation and innovative culture. , investments, their efficiency and the dependence of factors on the investment environment can be expressed in the form of a mathematical model (function 1.1) and in the form of an economic model (Scheme-1) as follows.

$$HIO' = f(MHASH, DD, MAIIS, MNTT, THD, IIM) \qquad (1.1)$$



Scheme-1. Structural model of the influence of factors on the economic growth of the region

Studies show that if the economic growth (G) of a region is equal to the additional change (ΔGRP) in the gross regional product (GRP),

$$G = GRP_2 - GRP_1 \quad \rightarrow \quad G = \Delta GRP \qquad (1.2)$$

In this case, it is appropriate to analyze the growing regional industry, which is playing an increasingly important role in the creation of *GRP* or net value added. In particular, in 2020, the GDP of the Samarkand region will reach 43834.7 billion soums, of which the gross added value of industries amounted to 42,926.4 billion soums. The share of industry (including construction) was 24.6%. However, in 2010 this figure was only 12%. This shows that the role of industry in the economic growth of the region is increasing. Therefore, an econometric analysis of the sustainability of the industrial potential development trend and the dynamics of the factors influencing it is important for understanding the industrial potential of the region and developing promising strategies for its further development. However, modeling the above factors affecting production potential is not possible. This is due to the fact that the statistical database on some factors, such as fixed assets, innovations, external demand for local goods, is not fully formed. Therefore, using the available statistical data, it is advisable to analyze the processes in the industry using econometric models based on the real situation.

First of all, it is necessary to analyze the stability of the dynamics of factors; in particular, it is necessary to analyze the dynamics of the elasticity coefficients associated with investments included in the regional industry, and investments in the region as a whole, respectively, and the total resources employed in the industry. For this, the following general elasticity function is used.

$$E = \frac{\Delta I\%}{\Delta I_j\%} \qquad (1.3)$$

The general function $\frac{\Delta I\%}{\Delta I_j\%}$ for calculating the elasticity of labor resources in this industry relative to total labor resources can be given as follows.

$$E_{L_j}^{L} = \frac{\Delta L}{\Delta L_j} \cdot \frac{L_j}{L} \qquad (1.4)$$

here:

$E_{L_j}^{L}$ - coefficient of elasticity of labor resources in industry in relation to total labor resources;

L - the number of labor resources employed in the industry;

L_j - the total number of labor resources;

ΔL - change in the number of labor resources employed in industry;

ΔL_j - the volume of general labor resources has changed.

The general function for determining the coefficient of elasticity of investments in regional industry in relation to the total volume of utilized investments can be presented as follows.

$$E_{K_j}^{K} = \frac{\Delta K}{\Delta K_j} \cdot \frac{K_j}{K} \qquad (1.5)$$

here:

$E_{K_j}^{K}$ - coefficient of elasticity of investments in industry in relation to the total volume of utilized investments;

K - the amount of investment in industry;

K_j - the total amount of utilized investments;

ΔK - difference in investment in industry;

ΔK_j - difference in total investment.

RESULTS AND DISCUSSION

In 2020, 5820.4 billion soums were allocated for the development of the region's industry, which is 39.7% of the total investment. Also, the volume of investments in industry in 2020 increased 4.5 times compared to 2019, 10.6 times compared to 2015 and 23.0 times compared to 2010. In addition, 171.1 thousand labor resources work at the industrial enterprises of the region, which is only 8.0% of the total labor resources. However, the number of labor force employed in industry in 2020 increased 1.02 times compared to 2019, 1.05 times compared to 2015 and 1.18 times compared to 2010 (Table 1).

Table 1. Some economic indicators of Samarkand region (2020)

№	Region	Total investment (billion soums)	Investment in industry (billion soums)	Total labour resources (thousand)	Labor force in the industry (thousand)
1	Samarkand city	6254,1	2313,4	299,7	46,3
2	Kattakurgan city	396,1	117,1	49,8	5,7
3	Aqdaryo	643,2	89,3	87,7	4,7
4	Bulungur	426,0	34,9	102,6	6,5
5	Jomboy	519,6	254,3	94,7	6,0
6	Ishtikhan	352,6	287,1	139,1	8,0
7	Kattakurgan	249,6	26,9	149,4	9,5
8	Kushrabat	960,8	617,2	72,5	7,2
9	Narpai	290,9	74,3	116,8	6,6
10	Payariq	472,1	1,2	136,1	7,4
11	Pastdargam	785,5	128,3	193,5	11,5
12	Pakhtachi	430,1	300,7	79,4	4,6
13	Samarkand	1165,4	272,4	138,1	15,8
14	Nurobod	457,3	166,5	82,7	2,9
15	Urgut	754,5	792,0	278,0	24,7
16	Tailak	498,6	344,6	110,3	3,7
Total:		**14656,4**	**5820,4**	**2130,4**	**171,1**

Using functions (1.4) and (1.5), based on the data in Table 1, it is possible to find elasticity coefficients of changes in investment in the industry of districts (cities) of the region, depending on the change in total investment in the region (city), as well as changes in the labor force employed in the industry of the district (city), depending on the change in the total labor force in the region (city) (table 2).

Table 2. Dynamics of elasticity coefficients

№	Regions	2012		2014		2016		2018		2020	
		$E^K_{K_j}$	$E^L_{L_j}$	$E^K_{K_j}$	$E^L_{L_j}$	$E^K_{K_j}$	$E^L_{L_j}$	$E^K_{K_j}$	$E^L_{L_j}$	$E^K_{K_j}$	$E^L_{L_j}$
1	Samarkand city	0,029	0,003	0,023	0,163	0,037	0,496	0,097	0,191	0,081	0,140
2	Kattakurgan city	0,012	0,002	0,246	0,053	0,011	0,138	0,065	0,132	0,011	0,286
3	Aqdaryo	0,060	0,004	0,256	0,006	0,039	0,021	0,088	0,012	0,582	0,006
4	Bulungur	0,017	0,008	0,018	0,008	0,376	0,021	0,016	0,009	0,006	0,011
5	Jomboy	0,648	0,018	0,214	0,003	0,018	0,048	0,085	0,004	0,176	0,022
6	Ishtikhan	0,093	0,006	2,413	0,004	0,094	0,015	0,056	0,006	0,290	0,005
7	Kattakurgan	0,001	0,004	0,011	0,006	0,245	0,010	0,008	0,017	0,008	0,007
8	Kushrabat	0,004	0,019	0,300	0,002	1,102	0,024	5,691	0,048	0,062	0,001
9	Narpai	0,000	0,006	0,098	0,005	0,025	0,005	0,004	0,028	0,020	0,001
10	Payariq	0,027	0,005	0,126	0,002	0,313	0,013	0,005	0,020	0,000	0,108
11	Pastdargam	0,127	0,000	0,341	0,010	0,131	0,011	0,095	0,017	0,018	0,181
12	Pakhtachi	0,003	0,007	0,488	0,001	0,038	0,009	0,032	0,009	0,231	0,093
13	Samarkand	0,686	0,000	3,972	0,036	0,966	0,189	0,064	0,112	0,050	0,049
14	Nurobod	0,003	0,001	0,015	0,005	0,167	0,039	0,006	0,004	0,037	0,030
15	Urgut	0,428	0,013	0,065	0,068	0,094	0,054	0,490	0,083	16,330	0,034
16	Tailak	0,065	0,000	0,414	0,000	0,195	0,003	0,016	0,003	0,699	0,003
Total:		**0,068**	**0,007**	**0,064**	**0,000**	**0,217**	**0,003**	**0,068**	**0,003**	**0,130**	**0,017**

According to the analysis, the dependence of the change in investment in the industry of the district (city) on the change in the total volume of investment in the district (city) is elastic in Urgut (2020 $E^K_{K_j} = 16{,}3$), Koshrabat (2018 $E^K_{K_j} = 5{,}7$; 2016 $E^K_{K_j} = 1{,}1$), Ishtikhan (2014 $E^K_{K_j} = 2{,}4$) and Samarkand (2014 $E^K_{K_j} = 3{,}9$), and the rest of the districts (cities) turned out to be inelastic ($E^K_{K_j} < 1$). The analysis also showed that the dependence of changes in labor resources employed in the industry of districts (cities) on changes in total labor resources in the district (city) is inelastic ($E^K_{K_j} < 1$) in all districts (cities).

In 2011-2020, investments in the industry of the Urgut district of the region were recognized as elastic compared to the total volume of investments, while the labor force employed in the industry of the city of Samarkand was elastic compared to the total labor force.

In conclusion, it can be noted that over the past period, the inflow of investments into the industry of the Urgut district of the region has increased and the number of new workplaces in industry of Samarkand has increased. This is evidenced by the growing share of both districts (cities) in the total volume of industrial production created in the region. In particular, in 2020, the city of Samarkand will account for 44.0%, and the Urgut district - 8.5% of the industrial production of the region, which is the highest indicator in comparison with other districts (cities) of the region.

In general, the number of industrial enterprises in the Samarkand region has been growing in recent years. In particular, in 2020, 33,250 enterprises and organizations (excluding farms and farms) were registered in the region, of which 6,348 or 19.1% are industrial enterprises (Appendices 1-4).

It should be noted that if the production potential is mainly the volume of industrial production, then it is advisable to conduct an econometric analysis of the stability of the dynamics of the factors influencing it.

Usually, the dynamics of indicators is studied on the basis of dynamic models, that is, dynamic models show the change in indicators over time.

After all, training based on dynamic models is not only scientific and theoretical, but also has important practical significance. [9]

When determining the trend in the dynamics of economic series, in most cases high level polynomials

$$\hat{y}(t) = \left[a_0 + \sum_{i=1}^{k} a_t t^i \right]^u \qquad 2.3.6$$

$$(i = -1, 0, 1, \ldots, \mathrm{k}), \quad (u = -1, 1)$$

and exponential functions are used.[10]

$$\hat{y}(t) = \left[e^{a_0 + \sum_{i=1}^{k} a_t t^i} \right]^u \qquad 2.3.7$$

$$(i = -1, 0, 1, \ldots, \mathrm{k}), \quad (u = -1, 1)$$

Using the highest levels of the polynomial often results in a reduction in the mean square error. But at such moments, the equation remains unfulfilled. The alignment parameters are estimated using the least squares method. In order to estimate the parameters of the exponential function, it is necessary to take the logarithm of the value of the initial rows.

$$\begin{cases} \mathrm{n} \ln a_0 + a_1 \sum \ln t = \sum \ln y \\ a_0 \sum \ln t + a_1 \sum \ln t^2 = \sum \ln y \ln t \end{cases} \qquad 2.3.8$$

It is desirable to use an exponential trend equation to express changes over time, in particular growth. An exponential trend is inherent in processes developing in an environment that does not impose any restrictions on the growth of powers.[11]

$$\hat{Y} = a_0 e^{a_1 t} \cdot \varepsilon \qquad 2.3.9$$

where: $\hat{Y}$ is the expected value of the forecast, t is the time factor, $e = 2{,}718$ is the base of the natural logarithm, ε is a random variable (residual value).

Based on the above formulas and data, it is possible to construct exponential equations for the dynamics of the dynamics of factors affecting the regional (urban) industrial production of the region

Table 3. Exponential trend model of the dynamics of factors influencing the district (city) industry of the Samarkand region

№	Regions	Investments in industry	Labor force in the industry	Number of industrial enterprises
1	Samarkand city	$\hat{Y} = 45{,}43e^{0{,}265t}$	$\hat{Y} = 49{,}768e^{0{,}00417t}$	$\hat{Y} = 357{,}08e^{0{,}142t}$
2	Kattakurgan city	$\hat{Y} = 2{,}981e^{0{,}199t}$	$\hat{Y} = 5{,}208e^{0{,}0111t}$	$\hat{Y} = 39{,}264e^{0{,}146t}$
3	Aqdaryo	$\hat{Y} = 4{,}0141e^{0{,}268t}$	$\hat{Y} = 4{,}748e^{0{,}00973t}$	$\hat{Y} = 32{,}447e^{0{,}177t}$
4	Bulungur	$\hat{Y} = 5{,}058e^{0{,}179t}$	$\hat{Y} = 5{,}41e^{0{,}0193t}$	$\hat{Y} = 40{,}322e^{0{,}153t}$
5	Jomboy	$\hat{Y} = 15{,}514e^{0{,}126t}$	$\hat{Y} = 3{,}83e^{0{,}0237t}$	$\hat{Y} = 40{,}656e^{0{,}14t}$
6	Ishtikhan	$\hat{Y} = 2{,}72e^{0{,}295t}$	$\hat{Y} = 4{,}748e^{0{,}0379t}$	$\hat{Y} = 44{,}011e^{0{,}176t}$
7	Kattakurgan	$\hat{Y} = 1{,}006e^{0{,}196t}$	$\hat{Y} = 7{,}294e^{0{,}0235t}$	$\hat{Y} = 55{,}039e^{0{,}143t}$
8	Kushrabat	$\hat{Y} = 6{,}41e^{0{,}193t}$	$\hat{Y} = 4{,}337e^{0{,}0376t}$	$\hat{Y} = 35{,}582e^{0{,}582t}$
9	Narpai	$\hat{Y} = 0{,}911e^{0{,}247t}$	$\hat{Y} = 3{,}958e^{0{,}0345t}$	$\hat{Y} = 42{,}9e^{0{,}146t}$
10	Payariq	$\hat{Y} = 9{,}143e^{-0{,}0453t}$	$\hat{Y} = 4{,}04e^{0{,}0392t}$	$\hat{Y} = 55{,}831e^{0{,}153t}$
11	Pastdargam	$\hat{Y} = 4{,}981e^{0{,}24t}$	$\hat{Y} = 10{,}14e^{0{,}0184t}$	$\hat{Y} = 92{,}6321e^{0{,}145t}$
12	Pakhtachi	$\hat{Y} = 5{,}92e^{0{,}217t}$	$\hat{Y} = 2{,}79e^{0{,}0322t}$	$\hat{Y} = 33{,}409e^{0{,}131t}$
13	Samarkand	$\hat{Y} = 19{,}296e^{0{,}214t}$	$\hat{Y} = 14{,}21e^{0{,}014t}$	$\hat{Y} = 78{,}902e^{0{,}141t}$
14	Nurobod	$\hat{Y} = 2{,}158e^{0{,}255t}$	$\hat{Y} = 3{,}164e^{0{,}00883t}$	$\hat{Y} = 36{,}604e^{0{,}133t}$
15	Urgut	$\hat{Y} = 28{,}493e^{0{,}264t}$	$\hat{Y} = 18{,}794e^{0{,}0256t}$	$\hat{Y} = 76{,}303e^{0{,}179t}$
16	Tailak	$\hat{Y} = 9{,}559e^{0{,}179t}$	$\hat{Y} = 2{,}615e^{0{,}0288t}$	$\hat{Y} = 45{,}235e^{0{,}147t}$

Exponential trend models that reflect the change in the dynamics of investment in industry and the number of labor resources employed in industry under the influence of time, which are the main factors affecting the regional (urban) industry of the Samarkand region, were estimated by approximation error ($\overline{A}$), coefficient of determination (R^2), Fisher's test (F), Student's test (t_i), standard error (S_y) and Durbin-Watson test (DW).

Table 4. Results of evaluation of exponential trend models

№	Модел	$\overline{A}$	R^2	F	$t_{a_0}; t_{a_1}$	S_y	DW
1	$\hat{Y} = 45{,}43e^{0{,}265t}$	5,91	0,796	35,123	5,9265; 12,5805	0,4691	1,89
2	$\hat{Y} = 49{,}768e^{0{,}00417t}$	2,07	0,0218	0,2003	0,4475; 61,7859	0,09779	0,65
3	$\hat{Y} = 357{,}08e^{0{,}142t}$	0,87	0,971	300,0246	17,3212; 105,6611	0,08603	1,13
4	$\hat{Y} = 2{,}981e^{0{,}199t}$	27,08	0,399	5,964	2,4421; 1,9737	0,8557	2,94
5	$\hat{Y} = 5{,}208e^{0{,}0111t}$	2,83	0,255	3,082	1,7556; 38,6512	0,06602	1,01
6	$\hat{Y} = 39{,}264e^{0{,}146t}$	1,98	0,947	162,0013	12,728; 47,2477	0,1201	1,05
7	$\hat{Y} = 4{,}0141e^{0{,}268t}$	20,41	0,62	14,6865	3,8323; 2,9306	0,7334	3,04
8	$\hat{Y} = 4{,}748e^{0{,}00973t}$	3,99	0,14	1,461	1,2087; 28,5318	0,08443	1,11
9	$\hat{Y} = 32{,}447e^{0{,}177t}$	1,3	0,985	610,4468	24,7072; 71,7754	0,07497	1,04
10	$\hat{Y} = 5{,}058e^{0{,}179t}$	21,23	0,432	6,8581	2,6188; 3,492	0,7178	2,66
11	$\hat{Y} = 5{,}41e^{0{,}0193t}$	1,51	0,773	30,6875	5,5396; 71,558	0,03649	1,74
12	$\hat{Y} = 40{,}322e^{0{,}153t}$	1,68	0,965	249,8999	15,8082; 56,4486	0,1013	0,95
13	$\hat{Y} = 15{,}514e^{0{,}126t}$	14,84	0,28	3,5005	1,871; 6,0036	0,7062	0,98
14	$\hat{Y} = 3{,}83e^{0{,}0237t}$	7,78	0,26	3,1549	1,7762; 14,8188	0,1401	1,57
15	$\hat{Y} = 40{,}656e^{0{,}14t}$	1,95	0,936	131,9402	11,4865; 44,7446	0,1281	1,02
16	$\hat{Y} = 2{,}72e^{0{,}295t}$	75,99	0,402	6,0496	2,4596; 1,2288	1,2591	1,5
17	$\hat{Y} = 4{,}748e^{0{,}0379t}$	3,56	0,702	21,2146	4,6059; 27,8816	0,08639	1,37
18	$\hat{Y} = 44{,}011e^{0{,}176t}$	1,55	0,975	357,2587	18,9013; 60,0318	0,09749	1,07
19	$\hat{Y} = 1{,}006e^{0{,}196t}$	26,35	0,453	7,4401	2,7276; 0,01134	0,7537	2,47
20	$\hat{Y} = 7{,}294e^{0{,}0235t}$	0,89	0,908	89,2807	9,4488; 117,9246	0,02606	2,87
21	$\hat{Y} = 55{,}039e^{0{,}143t}$	1,89	0,955	189,2923	13,7584; 56,7766	0,1092	1,59
22	$\hat{Y} = 6{,}41e^{0{,}193t}$	83,35	0,111	1,119	1,0578; 1,4997	1,9157	1,97
23	$\hat{Y} = 4{,}337e^{0{,}0376t}$	5,22	0,595	13,2378	3,6384; 20,932	0,1084	0,59

24	$\hat{Y} = 35{,}582e^{0{,}582t}$	2,05	0,939	139,5935	11,815; 51,0729	0,1083	0,83
25	$\hat{Y} = 0{,}911e^{0{,}247t}$	262,26	0,407	6,1793	2,4858; 0,1385	1,0428	2,37
26	$\hat{Y} = 3{,}958e^{0{,}0345t}$	6,33	0,489	8,6078	2,9339; 17,27	0,1232	1,51
27	$\hat{Y} = 42{,}9e^{0{,}146t}$	1,1	0,983	523,4128	22,8782; 87,0317	0,06679	1,19
28	$\hat{Y} = 9{,}143e^{-0{,}0453t}$	546,99	0,0174	0,1591	0,3989; 2,87	1,1924	1,86
29	$\hat{Y} = 4{,}04e^{0{,}0392t}$	6,89	0,49	8,6489	2,9409; 15,432	0,133	0,66
30	$\hat{Y} = 55{,}831e^{0{,}153t}$	1,17	0,98	439,0926	20,9545; 81,3607	0,07645	1,42
31	$\hat{Y} = 4{,}981e^{0{,}24t}$	19,64	0,52	9,746	3,1219; 3,076	0,8072	2,79
32	$\hat{Y} = 10{,}14e^{0{,}0184t}$	1,6	0,632	15,4488	3,9305; 73,0937	0,04901	1,93
33	$\hat{Y} = 92{,}6321e^{0{,}145t}$	1,79	0,941	143,4201	11,9758; 55,2244	0,1268	1,07
34	$\hat{Y} = 5{,}92e^{0{,}217t}$	21,46	0,404	6,1068	2,4712; 2,99	0,9197	1,86
35	$\hat{Y} = 2{,}79e^{0{,}0322t}$	6,05	0,598	13,3771	3,6575; 17,2047	0,09224	0,67
36	$\hat{Y} = 33{,}409e^{0{,}131t}$	1,51	0,957	198,8197	14,1002; 55,6576	0,09749	1,18
37	$\hat{Y} = 19{,}296e^{0{,}214t}$	7,33	0,717	22,7462	4,7693; 9,7406	0,4699	2,26
38	$\hat{Y} = 14{,}21e^{0{,}014t}$	1,41	0,449	7,3389	2,709; 75,6581	0,05424	1,14
39	$\hat{Y} = 78{,}902e^{0{,}141t}$	1,53	0,951	173,1118	13,1572; 60,2034	0,1122	1,02
40	$\hat{Y} = 2{,}158e^{0{,}255t}$	25,45	0,537	10,4429	3,2315; 1,4367	0,8277	2,51
41	$\hat{Y} = 3{,}164e^{0{,}00883t}$	6,85	0,0649	0,6249	0,7905; 15,204	0,1171	1,2
42	$\hat{Y} = 36{,}604e^{0{,}133t}$	1,52	0,954	187,1019	13,6785; 54,5937	0,102	1,24
43	$\hat{Y} = 28{,}493e^{0{,}264t}$	5,36	0,86	55,456	7,4469; 13,9127	0,3723	1,1
44	$\hat{Y} = 18{,}794e^{0{,}0256t}$	1,58	0,588	12,8502	3,5847; 60,6662	0,07478	2,48
45	$\hat{Y} = 76{,}303e^{0{,}179t}$	1,59	0,97	289,9517	17,028; 60,6973	0,1104	1,14
46	$\hat{Y} = 9{,}559e^{0{,}179t}$	27,19	0,247	2,9535	1,7186; 3,2043	1,0894	2,98
47	$\hat{Y} = 2{,}615e^{0{,}0288t}$	4,06	0,719	23,0288	4,7988; 23,617	0,06293	1,73
48	$\hat{Y} = 45{,}235e^{0{,}147t}$	1,8	0,955	192,2028	13,8637; 53,1286	0,111	1,54

The results of the assessment of the dynamics of changes in the factors affecting industrial production over time on the basis of econometric modeling of regional districts (cities) are presented as follows (Table 5), note:

I - time change has a high degree of influence on the factor change;

II - time change has little effect on factor change;

III - time change does not affect factor change;

IV - Other indicators have a greater influence on the change in the factor than the change in time.

CONCLUSION

Conclusions of the analysis of the dynamics of factors affecting the district (city) industry of Samarkand region on the basis of the exponential trend models

Table 5

№	Regions	Investments in industry	Labor force in the industry	Number of industrial enterprises
1	Samarkand city	II, IV	III, IV	II, IV
2	Kattakurgan city	I	II	II, IV
3	Aqdaryo	I	III, IV	II, IV
4	Bulungur	II, IV	III, IV	II, IV
5	Jomboy	II, IV	II, IV	II, IV
6	Ishtikhan	I	II, IV	II, IV
7	Kattakurgan	I	II, IV	II, IV
8	Kushrabat	II, IV	III, IV	I, IV
9	Narpai	I	II, IV	II, IV
10	Payariq	III, IV	III, IV	II, IV
11	Pastdargam	I, IV	II, IV	II, IV
12	Pakhtachi	I, IV	II, IV	II, IV
13	Samarkand	II, IV	III, IV	II, IV
14	Nurobod	I	III, IV	II, IV
15	Urgut	II, IV	III, IV	II, IV
16	Tailak	II, IV	II, IV	II, IV

In conclusion, we can say that the dynamics of investment in industry is growing due to the time factor in the city of Kattakurgan and Akdarya, Ishtikhon, Kattakurgan Narpay and Nurabad regions. The influence of other factors is higher in Samarkand city and Bulungur, Dzhambai, Koshrabat, Payarik, Pastdargom, Pakhtachi, Samarkand, Urgut and Tailak regions than the time factor. A low growth in the number of industrially employed labor resources over time and a high influence of other factors is observed in Kattakurgan and Dzhambay, Ishtikhon, Kattakurgan, Narpay, Pastdargom, Pakhtachinsky and Taylak districts. In Akdarya, Bulungur, Koshrabat, Payarik, Samarkand, Nurabad and Urgut regions, the influence of time is practically absent, i.e. the growth of labor resources in the industry depends on other factors.

In addition, in all districts (cities) of the region, the influence of time on the increase in the number of industrial enterprises is low, while the influence of other factors, on the contrary, is high.

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