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Factors Determining the Regional Industrial Development and Industrial Production Potential: The Case of Samarkand Region

Faktor Penentu Perkembangan Industri Daerah dan Potensi Produksi Industri: Kasus Wilayah Samarkand

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Abstract

This article discusses the industry sector as the main factor affecting the development of our economy. It is well known that the development of industries contributes to the development of other sectors of the economy. Factors affecting the potential of industrial production were studied and analyzed using some boundary values that represent the sustainable development of the industry in the Samarkand region. Investments play an important role in the sustainable development of industry in the region. The analysis of the linear correlation between investments in fixed assets and GDP, as well as the following empirical models between gross industrial output and its factors for the Republic of Uzbekistan and the Samarkand region are presented. Conclusions are based on models.

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INTRODUCTION

Key factors in the development of society are the industrial sector. The development of industries in the regions depends on the economic, social and geographical features of this region. Ongoing political and economic reforms in our country contribute to the rapid development of industries in the regions. To effectively implement these processes, it is necessary to study and analyze the essence of structural changes in the economy. Industry is one of the main sectors of the economy, because this industry differs from other industries in its added value, its role in meeting the needs of the population and a high-performance locomotive for other branches economy.

The development of the industrial sector in the regions contributes to the sustainable development of the national economy. Diversification processes will be improved through the processing of all extracted and cultivated resources in industry, the production of new products, as well as an increase in the assortment and nomenclature [Mamadjonov. 2018]

The experience of developing and new industrial countries shows that most of the economic success of these countries is due to deep structural changes in industry, especially in manufacturing [UNIDO. Industrial Development Report 2016].

Studies show that industry is the driving force behind economic growth, and in many studies this view has been made possible through the use of a new combination of innovation and knowledge in the industry compared to other sectors of the economy. This will lead to increased labor productivity and productivity, which will lead to increased economic growth [Lall S., 2000].

Today, the industry can also effectively address issues such as ensuring the necessary balance in the market, competitiveness of the economy and increasing incomes of the population, localization of production, and this sector plays an important role in job creation. In particular, the creation of one job in the manufacturing industry will lead to the creation of two or three jobs in other sectors [Lavopa A. and Szirmai A. 2012]. According to studies, wage increases are directly related to structural changes on the path of industrialization, which significantly contributes to income growth [Lavopa A. and Szirmai A. 2012].

In underdeveloped countries, the opening of low-tech labor-intensive industries stimulates sustainable employment growth and leads to higher incomes (manufacture of clothing, textiles). In middle-income countries, the development of medium-sized industries does not create a large number of jobs, but provides high labor productivity (non-ferrous metallurgy and metal production). The dynamics of the industrial sector has a significant positive impact on the development of other industries and sectors of the economy. In particular, the development of food and light industry enterprises stimulates the development of agriculture, forestry and fisheries.The development of the manufacturing industry will also have a significant impact on the development of the services sector (banking, insurance, communications, trade and transport). In particular, some industries are directly dependent on the processing industry, and without these services, industrial goods simply do not reach consumers. The manufacturing industry will also have a positive impact on the development of research, wholesale and retail trade, car repair and maintenance.

It is advisable to clarify the essence of the concept of “sustainability” before identifying factors that contribute to sustainable industrial development in the regions. “The concept of sustainability has been widely studied by foreign scientists and experts, and corresponding definitions have been given. In many English publications published by scientists, “stability” is a constant position, the equality of a particular object and its return to the first as a result of a certain exchange. In publications published by French scientists, “stability” is a description of what can always be done in the same situation. The Russian Economist G. Fetisov also claims in his scientific work that “stability” is only progress, that is, progress.

RESULTS AND DISCUSSION

Industrial development in the region is a complex and long-term process, as evidenced by the experience of China, India, South Korea, Latin America and many other industrialized countries. It should be noted that the development of the industrial sector cannot be clearly expressed by one or more indicators. Therefore, it is advisable to use a scorecard in this process.

Based on the foregoing, the scorecard, which represents the development of a diversified industry, is conditionally divided into four levels:

macro level: the share of industry in GDP, gross industrial product, GDP per capita, value added in production, share in mining and processing industries, exports in gross production, new jobs created in industry and small enterprises, the overall efficiency of macroeconomic factors (TFP - total factor productivity), state budget expenditures on industry, foreign investment in industry Network share in the world market in high-tech products, network equity (stock) at the macro level, the material (resource), science and technology, energy, nature, and

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human resources, sector performance and capital adequacy.

At the regional level: the share of industry in GRP, gross regional product, the level of regional concentration of industrial production (%), localization of production in the region, as well as the degree of specialization of a particular industry in the region, the level of industrial processing in the region.

Mesolevel: industry-wide gross value added, high-tech products in the industry's export structure, industry share in gross domestic product, global brands, the number of highly qualified engineers and researchers, network licenses and patents, scarce industry resources. Utilization rate (in percent).

Microlevel: energy and material potential of industrial products, profitability of production, updating of industrial equipment, depreciation rate, share of machinery with common equipment up to 10 years.

Some indicators of industrial development in the regions reflect the effectiveness of the industry, and some indicators reflect the innovative development of the industrial sector. For example: the share of industry in GDP, gross industrial product, gross value added, the share of industry in GRP, gross regional product, regional concentration of industry, the share of industry in gross industrial production and the profitability of industry at different levels of industry are indicators of the level of efficiency. The global market share of high-tech products, the number of world-class brands, the number of highly qualified engineers and researchers in the global market reflect the innovative development of the industry.

In addition to the above, the following indicators reflect the innovative development of the industry [Proekt PROON. - T. 2011]:

1. the share of high-tech products in GDP (high-tech products / GDP);
2. The share of high-tech industry in total industrial production (high-tech production / gross industrial production);
3. the level of employment in the high-tech sector (the number of people employed in medium and high-tech sectors / total working-age population);
4. export share of high-tech products (export volume / total export volume of high-tech industrial products).

Industry is a leading sector of the economy, therefore, its development has always been the subject of scientific interest of scientists of the world economy. Even in some countries, critical values have been developed to define sustainable industrial development. For example, for the Samarkand region, we analyze the following critical values proposed by academicians Y.Glazev and Professor V. Lokosov. (Table 1).

Indicators	Boundary values	For Samarkand region (2019)
Fixed capital investment as a percentage of GDP	25,0	26,0
The share of engineering in industry,%	25,0	26,6
The share of processing industries in industry,%	70,0	95,8
The share of material production in GDP,%	66,0	66,7
The share of exports in material production,%	25,0	1,5
The share of foreign capital in investments,%	25,0	21,5
The share of processing industry products in export,%	50,0	63,4
In terms of energy consumption (1000 tons of oil per GDP):		
total energy costs	0,15	-
electricity costs	0,02	-
oil and gas costs	0,10	-
Loss of minerals during mining (as a percentage of total volume)	3-8	-
Average labor productivity growth rate, percent	6,0	2,9

Table 1. *Some boundary values reflecting sustainable industrial development in the regions [Glazev S.Iý., Lokosov V.V. 1998]*

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In our opinion, the indicators and values presented above are measurable variables, and these values and values change as the levels and characteristics of the economic development of countries change. In addition, some of the boundary values that represent the sustainable development of some industries are outdated. An example of this is the decline in the share of material production in GDP in developed countries. The export share and low labor productivity can be explained by the insufficient number of new innovative projects in the region. This leads to low competitiveness of the product and low export potential.

Factors contributing to the sustainable development of industry can be divided into two groups. These are internal and external factors that contribute to sustainable industrial development.

The main external factors determining the sustainable development of industry in the region are:

1. advantageous geographical position of the territory;
2. The level of development of neighboring regions and countries;
3. the possibility of a direct exit of the country to world markets;
4. structural changes in the global market, etc.

The main internal factors determining the sustainable development of industry in the region are:

1. the level of provision of the region with natural resources;
2. quantity and quality of labor in the region;
3. quantity and quality of fixed capital in the region;
4. a strong legal and personnel base for the region;
5. rationality of the location of industries in the region;
6. favorable investment climate and investment attractiveness in the region;
7. level of development of the production infrastructure of the region, etc.

Many of the above factors that determine the sustainable development of the industry in the region also determine the industrial potential of the region. A favorable investment climate and investment attractiveness play an important role in building this potential. As international experience shows, there is a close linear correlation between the growth rate of investment in the economy of the region and the growth rate of industrial production. For the Samarkand region, the correlation between these two indicators is 0.873. If we write the Cobb-Douglas production function in a linear form, it will look.

$$\ln GIP = \ln \gamma + \alpha \ln K + \beta \ln L + u \quad (1)$$

Figure 1. *If we write the Cobb-Douglas production function in a linear form*

Here, -gross industrial product (billion sums), -investments in fixed assets of the industrial sector (billion sums), -employed in industrial production (thousand people). Based on this theoretical model, we obtain the following empirical model between the gross industrial production of the republic and its factors:

$$\ln GIP = \underset{(0.7)}{5.05} + \underset{(2.8)}{0.5} \ln K - \underset{(-0.4)}{0.6} \ln L + \underset{(2.0)}{0.1} t$$

Figure 2. *empirical model between the gross industrial production of the republic and its factors*

The empirical model presents their t-statistics among variables in parentheses, also in accordance with the model obtained, we have

$$R^2 = 0.996,\ F_{xak} = 467.6,\ RSS_{UR} = 0.161,\ \gamma = e^{5.05} \approx 150.7,\ \alpha = 0.5,\ \beta = -0.6 \text{ values.}$$

Figure 3. *The empirical model presents their t-statistics among variables in parentheses*

If we look at the regression form of this model for the Samarkand region, it will look as follows.

$$\ln GIP = -8.82 + 0.67 \ln K + 3.11 \ln L \ (3)$$

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Figure 4. *If we look at the regression form of this model for the Samarkand region*

In the resulting model, the value is 0.98. From the foregoing, it is clear that investment

is a key factor in regional development.

Direct investments do not just come into the region. Especially the modern investment market is characterized by high demand for supply. Attracting investors is not only depending on a privilege, but also a necessary socio-economic environment, a clear separation of local laws, a clear future and a well-developed market infrastructure. Summing up, we can say that the development of the industrial sector provides for the modernization of all sectors of the economy through production and labor. The development of the national economy, science, health, culture, education, sports and tourism is directly proportional to the level of industrial development. Based on the foregoing, we can say that given the high role of industry in the development of the national economy, there is a special need for sustainable development of the industry.

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