



Factors Determining the Economic Effect of the Industry Network and Econometric Approaches to Their Evaluation

¹ **Kasimov Azamat Abdukarimovich**

Received 16th Jan 2023,

Accepted 19th Feb 2023,

Online 11th Mar 2023

¹ Doctor of Philosophy in Economics (PhD),
Republic of Uzbekistan
adeza13@mail.ru

Abstract: This article describes in detail the factors representing the economic potential of the industrial sector and the econometric approaches to their assessment. The classification of econometric modeling of socio-economic processes and the mechanism of industrial production analysis have been developed. Also, priority directions for improving economic indicators and further development of the industrial sector were proposed.

Key words: industry, economic-mathematical principles, econometric model, analysis, factor, economic development.

Introduction

Ensuring economic and social development, including increasing the economic potential of industrial sectors, and fundamentally improving the lifestyle of the population, theoretical research requires comprehensive and accurate statistical data.

Decision No. PQ-4796 of the President of the Republic of Uzbekistan dated August 3, 2020 "On measures to further improve and develop the national statistical system of the Republic of Uzbekistan" [1] as a consistent continuation of measures to create a statistical system that widely uses modern information and communication technologies serves as a legal basis for bringing data collection, collection, storage, processing to a new level. Also, with this decision, the "National strategy for the development of statistics of the Republic of Uzbekistan in 2020-2025" was approved.

This is of great importance in the analysis and assessment of the country's economic potential, increasing the availability and access to a true, perfect information base, and improving the quality of the assessment of the real economic potential.

Implementation of the main tasks set for the socio-economic development of the state, the continuation of reforms and ensuring economic balance, as well as the implementation of strategically important projects aimed at the main leading sectors of the economy, including the modernization and diversification of industrial sectors, as well as the development of logistics and information and communication infrastructures, are urgent today. is one of the issues. In this regard, it is necessary to rapidly develop industrial sectors and improve transport infrastructure based on the proper direction and effective use of domestic resources.

Further deepening of economic structural reforms, further revitalization of investment activities of industrial enterprises, broad attraction of foreign direct investments and their effective use, technical and technological rearmament of production, creation of new jobs and, based on these, factors affecting the stable and dynamic development of the national economy it is necessary to study, analyze and develop models of economic and social development.

Literature review

In our opinion, modeling has two important aspects:

- 1) It allows to identify the economic laws and to find the most efficient and cost-effective ways of applying them in practice.
- 2) It will be possible to mathematically express complex socio-economic processes through computer programs and obtain accurate analytical results.

Economic-mathematical and econometric modeling methods for increasing the efficiency of industrial production processes and industrial sectors are widely used in the developed countries of the world. In particular: the relationship between the quantities in production processes in Russia and other CIS countries, for example, the growth of the production volume in the enterprise in a certain period lags behind the increase in wages, the increase in the amount of industrial waste, the increase in energy consumption, the increase in other production costs, etc., are modeled by linear and non-linear methods. In proved, it is possible to identify or eliminate the problems of reducing material, financial and time costs, as well as to optimize production and choose the most reasonable solution from various options.

In the same way, it is widely used in Asian countries such as the People's Republic of China, South Korea, Japan, Singapore, and European countries such as England, France, Germany, Italy, Spain, Denmark, Norway, Sweden, Switzerland, as well as in the USA, Canada, Australia and other countries. and research is conducted in this regard. Also, in countries such as England, France, Germany, the USA, based on the development of the field of information and communication technologies (ICT), new models of direct access to the global market and innovative business models of global competitiveness have been developed and are being put into practice [2].

In today's environment, small and medium-sized enterprises (SMEs) that start with a global strategy can move quickly to take advantage of cross-border activities [3]. Globalization creates opportunities not only for income growth, but also for knowledge exchange and empowerment. Therefore, international companies will be more competitive in the long run.

After all, the place and potential of each country in the world community is determined by its level of socio-economic development. This can be achieved by introducing specific mechanisms of socio-economic development. It is important that these mechanisms are primarily focused on meeting the needs of economic sectors, especially industry, for material, technical and capital resources, effective implementation of inter-sectoral structural restructuring, as well as rational investment policy.

The development of the country's economic system depends on its production, labor potential, effective location of production forces, the standard of living of the population, and the effectiveness of local government bodies. World experience and practice also show that the problems related to the effective use of the raw material base and labor potential of each region can be solved only through medium and long-term programs and prospective plans [4].

The system of factors plays a major role in economic growth. However, it should not be concluded that the combined effect of all factors is equal to the sum of the level of influence of each of them. The system of factors is not a simple arithmetical sum of them, but it is necessary to take into account internal connections and mutual influence of structural elements [5].

Today, the study of various economic phenomena, processes and economic-mathematical models are widely used for evaluation. When creating such models, the most important factors that represent the phenomena under study are determined and those that are not important for solving the problem are excluded [6].

From this point of view, in order to ensure the development of industrial sectors and economic growth, it is necessary to form optimal models of socio-economic development of the country aimed at forecasting the development trends of production complexes, implementing targeted structural changes in real sectors, increasing the competitiveness of products and choosing the priority directions of development [7]. Also, it is required to increase the efficiency of the resources used in the industrial sectors, to foresee the risks that arise in solving the existing problems, and to develop scientifically based measures and solutions [8]. In addition, it is appropriate to use economic-mathematical and econometric models in the development of strategies for the development of industries, to comprehensively analyze the sustainable growth of industrial sectors and to achieve global competitiveness, as well as to evaluate the quantitative connection of factors related to the production process.

Research methodology

In this study, the factors representing the economic potential of the industrial sector and the econometric approaches and methods of their assessment are theoretically expressed. Expert evaluation, analytical comparison, logical reasoning and observation methods were used. Also, the researches of foreign and local scientists on this topic were analyzed and their scientific views were studied.

Analysis and results

According to the analysis, we can see that the factors affecting the development of industrial sectors have their own characteristics according to the degree of their interdependence and influence. In particular, financial and material and technical resources, labor resources, raw material base and other factors can be included among the factors that directly affect the dynamics of industrial production volume. However, the development of industries is a complex and long-term process. Therefore, there are many factors that affect this process directly and indirectly and in different degrees. For example, institutional management features, geographical location, environmental opportunities, innovation potential, raw and natural resources, intellectual capabilities of labor resources, levels of development of transport and market infrastructures, etc. The interdependence of these factors can be described in the form of the mechanism of development of industrial sectors as follows.

The analysis shows that the features of institutional management in the country also depend on the country's geographical location and environmental capabilities. The geographical location of the country determines the availability of natural resources and transport infrastructure, and affects the level of development of market infrastructure. The efficiency of industrial sectors largely depends on its innovative potential, financial capabilities, investment attractiveness, the formation of the material and technical base, and the level of internal and external consumption.

Based on the above, we propose the following steps in the implementation of the proposed mechanism for the development of the industrial network:

1st stage, increasing the level of transparency and authenticity of the institutional management system in the state;

2nd stage, in order to further develop the international trade corridor, expand financial freedom and further simplify organizational and administrative processes;

3rd stage, establishment of modern technological logistics infrastructure and improvement of the condition of the existing system (transport roads);

4th stage, establishment of multi-sectoral industrial clusters to strengthen the effective use of natural and seasonal (such as agricultural products) raw material base;

5th stage, ensuring transparency of the processes of state financial support of business entities (allocation of subsidies, financing and lending on the basis of state programs) and their implementation based on market mechanisms, etc.

The use of economic-mathematical methods and econometric models for the study and analysis of economic processes in the creation of the optimal model of the development of the industrial network, especially in the current uncertainty and risk conditions, allows to avoid the negative consequences that can be expected [9].

Accordingly, research aimed at improving the effectiveness of the factors affecting industrial production, as well as studying based on dynamic models suitable for risk and uncertainty relations, acquires scientific-theoretical and practical importance. Because, theoretically, there is a concept of economic models based on economic laws, and these models have the ability to summarize statistical data related to a specific sector of the economy and to express the result by reflecting abstract indicators. It is for this reason that in the analysis of economic processes, economic-mathematical models created to determine other variable values on the basis of some variable values are widely used (Fig. 1).

The purpose of economic-mathematical methods and models is to improve the directions of economic analysis, to express the connection between various economic processes and changes with quantitative indicators, and to increase the effectiveness of economic analysis based on the identification of trends of change.

The advantage of analyzing economic processes, forecasting, planning and optimizing management solutions through economic-mathematical methods and models (Fig. 1) is that it fully covers the factors that affect it and separates the most important of them, that is, the factors that have a high impact on the result, and the previous structural calculation -replacing books with exact calculations, creating and solving multi-dimensional problems, makes it possible to make complex manual calculations easier and more accurate on computers.

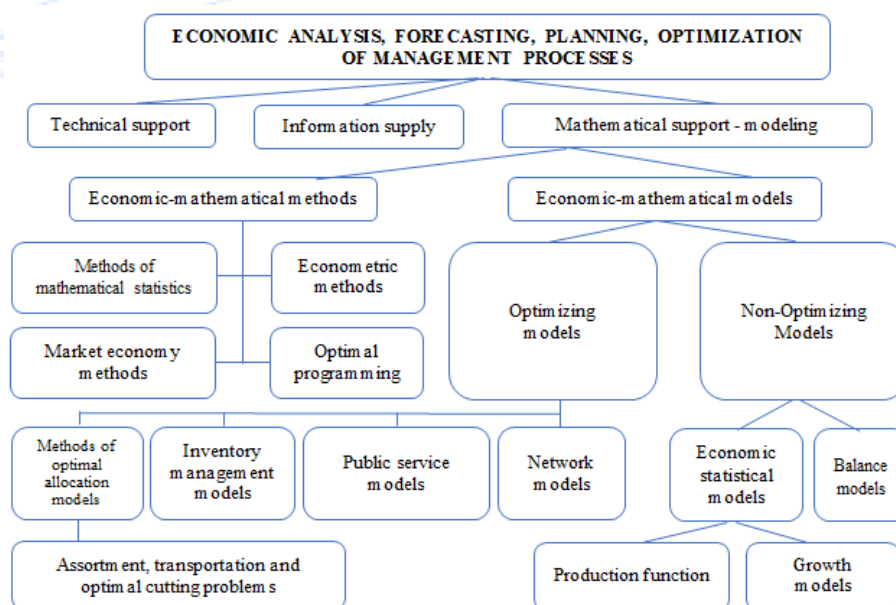


Figure 1. Classification of modeling of socio-economic processes¹

¹ Author development.

Today, developed countries of the world widely use ISIC (International Standard Industrial Classification) criteria for industrial industry analysis. These criteria are based on a production-oriented or supply-oriented conceptual framework, which takes into account indicators such as production organization, production process and technology, as well as product and use characteristics. In addition, new orders, prices and occupancy indicators are not overlooked.

If the main economic indicators of industrial sectors are the volume of production, financial and labor resources, and fixed assets, some economists [10] believe that it is appropriate to use indicators such as the average salary and the availability of continuous education for employees in the assessment of its social stability.

In general, any economic indicators and their analysis are important in forecasting the future results and determining the development prospects of the industry. Economic indicators reflect various economic processes quantitatively and qualitatively in numbers, it includes data of different time periods, periodic reports, economic summaries, etc.

Economic analysis and assessment of the state of development of industrial sectors - is carried out on the basis of statistical data collection, processing, dynamics of production volume, financial condition, level of utilization of labor resources, distribution of capital, determination of the level of supply of resources of the production process, as well as evaluation of technical and economic efficiency is increased.

Based on the results of the research, we propose the following mechanism for analyzing the production activity of industrial sectors (Fig. 2).

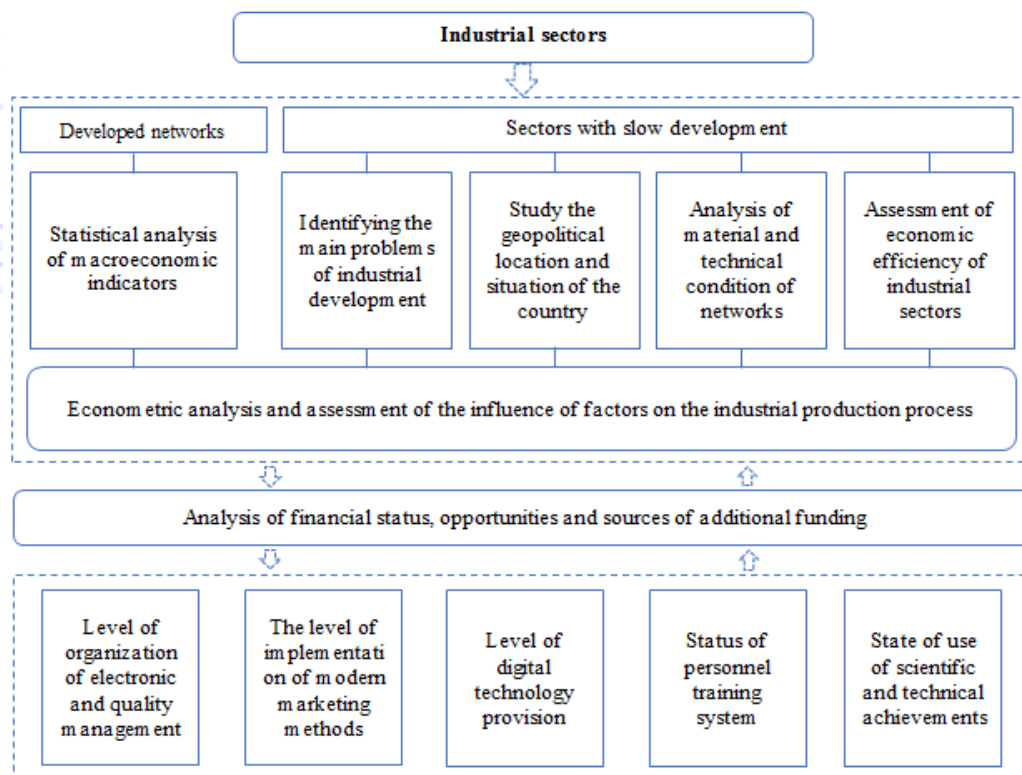


Figure 2. Industrial production analysis mechanism²

² Author development.

The proposed mechanism is a simplified three-step system of analyzing the state of industrial sectors, according to which:

at the first stage, based on the financial and economic situation of the industrial sectors, they are divided into two groups, and the objective and subjective factors influencing the production processes are studied for each group. Then, the impact of these factors on production is evaluated using econometric models and methods;

in the second stage, the financial situation of the industrial network, complex or enterprise is analyzed, sources and possibilities of additional financing of the production process are studied;

and in the third stage, the management and organizational processes of industrial production processes are studied, and for its further development, the analysis of organizational aspects, such as the introduction of digital technologies that are relevant today, the establishment of modern personnel formation, and the existence of innovative actions using the achievements of science, is considered.

In our opinion, the above serves as an important program for making optimal management decisions and defining future prospects and developing production strategies.

Conclusions

Based on the above, it is appropriate to take into account the following when assessing the potential of the industrial sector, improving economic indicators and determining priorities for its further development:

1. Establishment of strict control over the development and implementation of mechanisms for the effective implementation of promising tasks for the development of priority branches of industry as an important source of economic growth.
2. It is necessary to improve the investment program and direct it to the development of priority industries.
3. The country's entry into the world trade system involves opening the domestic market for foreign industrial products and strengthening competition. At the same time, strengthening the state support for industrial enterprises not only to survive in such conditions, but also to enter the world trade system and conduct successful activities.
4. Implementation of measures aimed at the development of sectors (enterprises) with slow development in the conditions of increased competition for investments, labor resources and other resources among industrial sectors.
5. Ensuring that activities to increase economic activity in most cases do not remain part of medium and long-term strategies or programs.
6. Wide implementation of scientific achievements and advanced technologies, including digital economy blockchains, in industrial sectors.
7. Organization of retraining of employees and provision of professional information-consulting services in large industrial enterprises.

In our opinion, at the current stage of the economic development of the industrial sector, it is necessary to increase the role of the state in the sustainable development of priority industries, as well as enterprises with slow development or new industrial enterprises, by introducing effective economic mechanisms, modernizing the material and technical base, strengthening material support and organizing optimal management. is appropriate.

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