

Date: 11th November-2025

ASSESSMENT OF FACTORS INFLUENCING INDUSTRIAL SECTOR DEVELOPMENT BASED ON ECONOMETRIC MODELLING

Ne'matov Shokhrukhbek Mamurjon ogli

Lecturer, Teacher of the Department of Economic Theory
Tashkent State University of Economics

Abstract: This article examines the influence of various economic determinants on industrial sector development using econometric modelling techniques. The study aims to identify key factors, measure the degree of their impact through quantitative indicators, and provide analytical results that may be applied in strategic planning and policy optimization. The findings can serve as a scientific basis for improving industrial competitiveness, strengthening forecasting potential, and developing more effective management decisions for long-term industrial sustainability.

Keywords: industrial development, influencing factors, econometric modelling, economic analysis, forecasting, competitiveness, quantitative evaluation.

The stable development of the industrial sector is one of the key factors that determines the economic capacity and strategic competitiveness of a country. Today, processes of modernization, increasing value added, technological renewal, expansion of export potential, and the introduction of digital management elements in industry are becoming priority directions of economic policy. At the same time, it is extremely important to identify the factors influencing industrial development, evaluate the strength of their impact, and apply them scientifically in the process of economic decision-making.

In recent years, industrial reforms have accelerated in Uzbekistan. In particular, according to the Presidential Decree PF-60 of January 28, 2022, "Strategy of New Uzbekistan," the tasks of deepening structural changes in the industrial sector, ensuring technological modernization, and achieving innovative development were defined. In addition, government decisions such as PQ-143, PQ-5611, PQ-4205 approved programs aimed at developing industrial clusters, attracting internal and external investment, modernizing industrial infrastructure, and optimizing the efficiency of resource utilization.

Under such conditions, conventional statistical methods are insufficient for analyzing economic processes. The use of econometric models is necessary to determine the interdependence and quantitative influence of factors affecting industrial growth. The econometric approach enables the quantification of essential determinants, strengthens forecasting capabilities, and increases the effectiveness of decisions to be made. From this point of view, the present research is aimed at identifying the main factors affecting industrial sector development and evaluating the degree of their influence using econometric models. The study also seeks to propose scientifically justified mechanisms for improving decision-making in industrial policy.

The economic development of the industrial sector plays a crucial role in shaping a country's sustainable growth trajectory. In modern economic conditions, industrial output



Date: 11th November-2025



is influenced not only by internal resources but also by institutional transformation, technological renewal, access to external markets, human capital quality and export diversification. Because these factors interact with each other, their influence cannot always be evaluated accurately through simple statistical description. Therefore, the use of econometric models has become increasingly important for examining the determinants of industrial growth.

The econometric approach allows conducting multi-factor analysis, measuring the degree of influence of each factor in quantitative form, producing forecasts, and supporting decision making in industrial policy on the basis of evidence rather than assumptions. International experience demonstrates that strategic industrial policy becomes more effective when decisions are based on econometric assessment. In Singapore, industrial development strategies were aligned with econometric forecasts that evaluated the impact of investment flows and tax incentives on production efficiency. In South Korea, the relationship between export orientation, innovation expenditures, and industrial productivity was measured through econometric models, and these results were actively used in adjusting annual industrial policies. In Germany, under the Industry 4.0 paradigm, the correlation between R&D investment, modernization of SME sectors and industrial productivity indicators was analysed statistically and used to design regional industrial development strategies.

Currently, Uzbekistan is also intensifying industrial modernization, strengthening cluster activities and expanding the production of higher value-added products. In this situation, it has become essential to identify the factors influencing industrial growth and evaluate their impact based on quantitative indicators. Econometric models serve not only as an analytical tool for understanding the system of influencing factors, but also as a methodological instrument for optimizing industrial strategy and improving strategic planning. The mathematical evaluation of factor influence reveals the regularities of industrial development and contributes to scientifically grounded policy decisions.

In summary, the development of the industrial sector is shaped by multiple economic determinants, and their quantitative evaluation requires modern analytical tools, especially econometric modelling. International practice proves that relying on econometric evidence improves the effectiveness of industrial strategies and enhances policy accuracy. Therefore, applying econometric methods to analyse the key drivers of industrial growth in Uzbekistan can support more efficient decision-making, strengthen competitiveness, and ensure sustainable industrial development in the long term.