

APPLICATION OF ECONOMIC INDICATORS FORECASTING MODELS IN DEVELOPING THE BUSINESS ENVIRONMENT

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Abstract

This scientific article examines the application of advanced models for forecasting economic indicators that play a crucial role in shaping the business environment. The study focuses on using sophisticated modeling techniques to predict key economic variables that are important for understanding the trajectory of business development. By applying advanced forecasting models, the study aims to provide insight into the dynamic nature of economic indicators and their impact on the overall business landscape.

Keywords: Economic forecasting, business environment, modeling techniques, forecast accuracy, economic indicators, dynamic nature.

Introduction

In order to achieve sustainable economic growth in Uzbekistan, the development of private entrepreneurship based on improving the business environment, the creation of a favorable business environment for entrepreneurship is one of the urgent issues of today. Therefore, it is important to reliably and optimally forecast the share of private entrepreneurship development based on improving the business environment in the country's GDP using mathematical models, taking into account the influencing factors. This article presents the theoretical foundations and methods of forecasting, a regression analysis of the factors affecting the share of private entrepreneurship development based on improving the business environment in GDP, and the forecasting procedure using econometric models.

Main part

Today, the share of private entrepreneurship development entities based on improving the business environment in the country's GDP directly depends on the proportion of the population employed in them, the amount of loans provided by commercial banks, and the number of private entrepreneurship development entities based on improving the business environment that benefit from tax incentives. Taking this into account, the need to develop



scientific forecasts for the future period using mathematical methods of these indicators is one of the urgent issues of today.

Forecasting is one of the economic methods of management, a set of ways, methods and tools for developing and implementing plans that determine the future state of the economic system. Forecasting is a type of object under study according to the type of forecasting, it is divided into economic, scientific and technical, resource - natural, demographic and social types. According to the field of forecasting - social forecasting, economic forecasting and scientific and technical forecasting are divided into types. Based on the method of obtaining and processing data, forecasting is divided into extrapolation method, comparison method, statistical methods. Depending on the scale of the forecasting object, economic forecasts cover all levels, from forecasts of individual enterprises and organizations (microlevel) to forecasts of the development of industries at the national level (macrolevel) or global laws (global level). Depending on the duration of the forecasting period, they are divided into the following groups:

- rapid forecasts up to one month;
- short-term forecasts up to one year;
- medium-term forecasts up to five years;
- long-term forecasts over fifteen years.

Econometrics is a science that combines a set of theoretical results, methods and approaches to interpreting the quantitative aspects of economic processes based on economic theory, analysis, statistics and mathematical-statistical methods. The word "econometrics" comes from the words "economy" and "metrics" (measurement), and was introduced by the Nobel Prize-winning Norwegian economist R. Frisch. Econometrics uses correlation and regression analysis, time series analysis, systems of homogeneous equations, and other methods studied in probability theory and mathematical statistics. Economic models are the basis of econometrics. These models serve to conduct scientific research in predicting and analyzing economic processes.

Factors influencing the growth of the share of private entrepreneurship development entities in the country's GDP based on improving the business environment are the share of the population employed in them, the amount of loans provided by commercial banks, and the number of private entrepreneurship development entities using tax incentives based on improving the business environment. A scientific forecast of the share of private entrepreneurship development entities in GDP based on improving the business environment for the next five years was carried out using econometric models. We forecast the share of small business entities in GDP based on regression analysis using econometric models. Regression analysis is one of the most common methods in data analysis.

When analyzing given numerical values, arbitrary variables (X) and arbitrary variables (Y) are considered. Regression analysis explains the change in the values of these variables. The regression equation is a formula for the statistical relationship between variables. If this formula is linear, we are talking about linear regression. The formula for the statistical relationship between two variables is called pairwise regression, and the relationship between several variables is called multivariate regression.



The second task of correlation analysis is to determine the density of the relationship between phenomena (variables). This is checked by calculating the numerical values of the correlation index $R \in [-1, 1]$ and the linear correlation coefficient $r \in [-1, 1]$. If $R=1$ ($r=1$), then there are functional relationships between the factors under study. If $R=0$ ($r=0$), then the factors are not related to each other. When assessing the density of relationships by the numerical values of R and r , the following conditional classification is used:

From 0.1 to 0.3 - weak connection; 0.3 - 0.65 - medium-strong connection; 0.65 - 0.80 - stronger than average connection; 0.80 - 0.99 - stronger connection.

The correlation index R is used to assess the density of connections between paired factors. The correlation coefficient can be used to determine the density of linear connections. A negative value of the correlation coefficient r indicates that there is an inverse relationship between events. Based on the data of the State Statistics Committee and the State Tax Committee, we will consider a regression analysis of several factors (X_1, X_2, X_3) that affect the resulting factor (Y) - the share of private entrepreneurship in the country's GDP, based on the improvement of the business environment. This is done based on the following table data: In the analysis of the data, the share of GDP in the development of private entrepreneurship based on improving the business environment was taken as the resulting factor (Y). As influencing factors: the share of population employment in the development of private entrepreneurship based on improving the business environment (X_1), the amount of loans allocated for the development of private entrepreneurship based on improving the business environment (X_2) and the number of subjects of the development of private entrepreneurship based on improving the business environment using tax incentives (X_3). Based on the processing of the table data using the computer program Microsoft Excel, the following regression analysis results are obtained.

Thus, the analysis of the mathematical model shows that the development of private entrepreneurship based on the improvement of the business environment increases the employment rate of the population, the amount of loans issued and the number of private entrepreneurship development entities using tax incentives, the share of private entrepreneurship development based on the improvement of the business environment in GDP does not decrease, but rather increases. The relationship between various factors affecting the volume of production of products (services) and the share of private entrepreneurship development enterprises in GDP in Uzbekistan has been analyzed by economists in their scientific works based on econometric models. In particular, the relationship between the factors affecting the volume of production of products (services) by private entrepreneurship development enterprises based on the improvement of the business environment, namely the amount of investment per thousand people and the number of private entrepreneurship development enterprises based on the improvement of the business environment, has been analyzed by regression analysis.

Conclusion

According to the results of the analysis, a 1% increase in the average volume of investments per thousand people leads to a 0.48% increase in the volume of goods and services created by



private entrepreneurship development entities based on improving the business environment, and a 1% increase in the number of private entrepreneurship development enterprises based on improving the business environment leads to a 2% increase in the volume of goods and services created by them. In conclusion, it can be said that analyzing the economic indicators of the development of private entrepreneurship based on improving the business environment and accurately forecasting its prospects will help ensure economic stability in our country and create a favorable business environment for entrepreneurship.

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