Ж. М. Тоштемиров
Университет науки и технологий (Ташкент)

ANALYSIS OF ECONOMIC CHANGES IN MATHEMATICAL MODELING

At present, with the development of society and economy, some new problems have emerged continuously. Among them, the more serious problem is that enterprises pay too much attention to economic benefits, which leads to problems in the development of many enterprises. Therefore, the problem caused by too much emphasis on economic benefits is one of the major economic problems. After this problem, our country's economy began to focus on economic input and output in the subsequent development process. And, related personnel have also studied the economic input-output technology and model, which is an economic quantitative analysis method that has been widely used in various aspects of the economic field since its emergence.

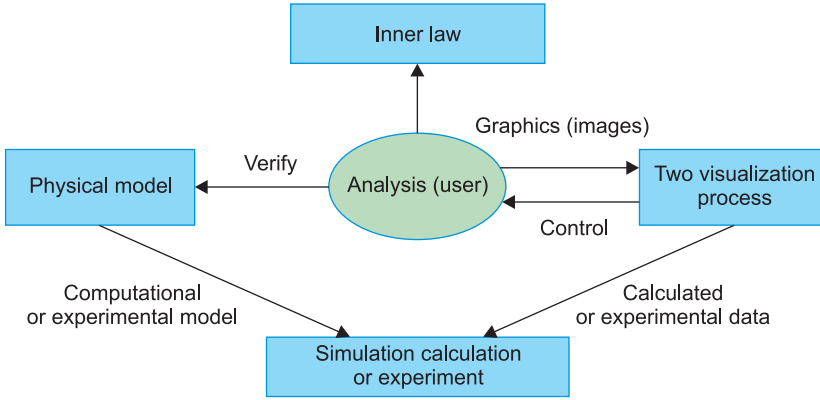
Mathematics is a highly abstract discipline that covers many fields and has a wide range of applications in economics, sociology, and psychology, among others. We can see that classifying variables from different perspectives often requires the consideration of several factors at the same time. For example, when people are faced with a problem in their lives, they choose to think about all the possible solutions to the problem before making a decision. Mathematical visualization is the use of computer technology to visualize areas that do not require precise data, such as functions and probabilities. It allows us to use existing knowledge to solve practical problems more easily, quickly, and effectively. The variables involved in this process can also produce a certain degree of «backward» effect or partially offsetting effect (which is unpredictability and nonordered error) with time change, thus affecting the effect of mathematical modeling, which makes the visualization theory more comprehensive and accurate to play its proper value.

The economic data is the basis for the construction of the visualization model. In the process of building it, it is necessary to classify the variables under study and then analyze the interrelationships and internal logical relations between these indicators. For example, for the attribute of production (output), cost of production, etc., it is a function, while for the attribute of consumer demand it is utility. These two sets of regression coefficients and test results are used to determine the level of economic development, how it determines the amount of input, and whether it grows and thus affects the rationality of the visualization modeling, which provide valid support for policy makers.

For mathematical visualization, scholars at home and abroad have carried out research from different angles and achieved some good results. These theories can be used to solve practical problems. There are many related discussions on science abroad. For example, two of the fa-

mous foreign economists Kahneman and Delphi put forward the «strategic» concept (Non-Levin); Professor James Gist of Harvard University in the United States believes that visualization is not only an information processing technology or tool, but also a source of human wisdom. The research on mathematical visualization in our country started late, and the research on visualization mainly focuses on economic variables, explanatory variables, and application fields. There is no complete system about how to apply the mathematical model to practice.

Scientific visualization refers to people's intuitive, concrete, and vivid definition of complex problems or phenomena and makes them a clear and easy-to-understand expression through visual and auditory methods. It mainly includes three aspects: the first is to make an accurate judgment on the existence of a large number of uncertain factors in the objective world; the second is to make an abstract generalization of the natural system in essence; the third is to describe the nature and various phenomena involved in the process of social development and their interrelations and interactions. The research model based on visual analysis is shown in figure.



Research model based on visual analysis

Based on the economic study of scientific visualization, we analyze the following aspects. Firstly, mathematical modeling: In the traditional field of economics, it is usually assumed that a variable can be expressed by a simple formula; secondly, the mathematical methods are improved and refined and applied to real life, converting the data that were impossible or partially unavailable to the results that can be obtained by simply calculating a functional expression, which is called a visualization algorithm. Finally, computer-aided technology is used to combine economic indicators with other nonquantitative factors to obtain quantitative indicators.