The ability to timely determine the maturation of the crisis is becoming one of the most important elements of the economic management system. Therefore, the study of the essence of crisis phenomena is very important.

For a long time, the efforts of scientists were aimed at forecasting crisis situations. Various theories and methodologies have been developed but they could not predict the crisis of 2008. This testifies to the lack of effective methods for tracking transformational changes in financial and economic systems. Theoretical models do not correspond to empirical data. Therefore, the search for scientific approaches for the convergence of theory and real processes continues.

This article summarizes the experience in research on the causes of crisis phenomena and examines approaches based on new technologies for analysing economic data. The main emphasis is on the methodology of physics and synergetics in the analysis of economic data. It is shown that the use of the laws of physics, the theory of chaos and fractal analysis in economic processes, has quite a successful application in studies of the problems of stability and stability of financial and economic systems.

These approaches allow a better understanding of economic processes. However, each individual method does not solve the problem posed. In the context of globalization, the modern economy is a complex system, the dynamics of which cannot be represented by one or more factors. It moves in a multiphase space. The motion of such systems is described by differential equations, which remain unknown. Therefore, we need a methodology for intellectual monitoring that will allow us to penetrate the depth of the processes that are occurring, will make it possible to reveal hidden patterns and warn about the approach of turbulence. Further development of research appears in the creation of a new theory containing all the main factors that affect the crisis process.