

## **ABSTRACT**

Graduation work: 145 pages, 23 images, 11 tables, 2 appendices, 16 sources.

We have considered main types and models of time series in modern economic. Also, we have analyzed the most common of the currently existing applications for processing statistical data. We have created decision support system that based on the chosen models and criteria of adequacy of models. We have set and resolved task of development and implementation of an algorithm that automatically selects the best model. Therefore, we have created integrated quality criterion of the model and forecast features.

Using an algorithm of choosing the best model that implemented in decision support system, we have modeled and forecasted (short-term prediction) such real financial and economic processes as Ukraine's gross domestic product, consumer price index of Ukraine and M3 money supply of Ukraine.

The system is implemented in the Visual Studio 2015 by using programming language C#. In this graduation work are examples of forecasting real financial and economic processes by using created system. We have considered the aims of subsequent improvement of the system.

TIME SERIES, AUTOCORRELATION FUNCTION, AUTOREGRESSION, AUTOREGRESSIVE–MOVING-AVERAGE MODEL, SAMPLE, FORECASTING, GROSS DOMESTIC PRODUCT, CONSUMER PRICE INDEX, M3 MONEY SUPPLY, INTEGRATED QUALITY CRITERION.