ABSTRACT

Bachelorthesis, 106p, 36fig., 10table, 23sources, 2supplements.

Topic: “Decision support system for non-stationary processes forecasting”.

Object of research: non-stationary processes in finance and economics areas.

Subject of research:forecasting methods of heteroscedastic and integrated processes.

Purpose of research:developing of software application for building mathematical models of non-stationary processes, conducting comparative analysis and choosing of the best model.

This paperinvestigatesthe nonlinearnonstationaryrandomprocessesof different nature, methods of modeling themusing models of integrated and geteroscedastic processes: polynomial and exponential trend, AR, ARMA, ARIMA, ARCH and GARCH.In many systems, particularly in the financial andeconomic areaprocessess of this nature are widespreaded, they are used for forecasting and risk management, planning enterprises budgets, evaluation of alternativeeconomic strategiesand so on.

In this work the program was developed in MATLABtoperform a comparativeanalysis of methods to estimatethe parameters of different models of non-stationary processes. There was made a choice of the best model for the given process was buildshort-rangeforecasting.Results that has been obtained may be used by a decision maker for his purposes.

PROCESS WITH TREND, AUTOREGRESSION, CONDITIONAL VARIANCE, HETEROSCEDASTIC PROCESS, SHORT-RANGE FORECASTING, DECISION SUPPORT SYSTEM