

ABSTRACT

For the bachelors work of Artem Matiash

“Volatility forecasting models in terms of fractal financial markets”

Thesis: 84 p., 14 fig., 6 tab., 2 appendixes, 17 sources.

VOLATILITY MODELS, GARCH, BMSM, TIME SERIES ANALYSIS, PYTHON, FINANCIAL INSTRUMENTS VOLATILITY FORECASTING.

The purpose of given thesis is to investigate volatility forecasting models, to compare obsolete and modern approaches to volatility modelling and to create own program implementation, which will analyze time series and build forecasts.

In this work, was made examination of existing forecasting models, which are used for calculating prices or returns of some financial instruments. Comparative characteristic of main models, implemented programmatically, was also done.

The result of this work is a program interface for volatility forecasting models comparison with the possibility of extending models class. It was also implemented an auxiliary library with acquired forecasts quality estimates. All of the modules were written on Python programming language with the use of pandas, numpy, pyqt and arch libraries.