

This thesis deals with financial time series models and their implementation in software products. The theoretical part of the thesis includes a description of the volatility models ARCH, GARCH, IGARCH, ARCH-M, GARCH-M, EGARCH and GJR-GARCH and their basic properties. The practical part examines and describes the implementation of the volatility models in the software products Mathematica, EViews and R. Tutorials on the use of each function are included, along with descriptions of the software inputs and outputs in the form of illustrative examples on simulated data and their application to real data.