

Rmetrics – Fact Sheet

An Environment for Teaching
Financial Engineering and Computational Finance
with R Rmetrics Built 200.10058

Packages:

1 fBasics

Markets and Statistics
Return Distributions
Correlations and Dependencies
Classical Tests
Chronological Objects
timeDate / timeSeries Classes
Daylight Saving Time Rules
Holiday Calendars

2 fSeries

ARMA and GARCH Modeling
*Long Memory Dependence**
Time Series Residual Tests
Unit Roots and Cointegration*
Regression Modeling
Equations Modelling
*System of Regression Equations**
*State Space Modeling**
*VARMA and mGARCH**
Technical Analysis, Benchmarks
Matrix Addon

3 fExtremes

Explorative Data Analysis
Fluctuations of Maxima
Extremes via Point Processes
Extremal Index
*Bivariate Distributions**
*Copulae**

4 fOptions

Basics of Option Pricing
*Option Trees**
Exotic Options
*Exponential Brownian Motion**
Gamma and Related Functions
Hypergeometric and Related Functions
Low Discrepancy Series
Monte Carlo Valuation
Exponenti

5 fBonds

*Bond Arithmetic**
*Yield Curve Modeling**
Interest Rate Options
*Replicated Portfolios**

6 fPortfolio

*Statistical Analysis of Portfolios**
*Stock Picking – Cluster Analysis**
*Markowitz Optimization**
*CVaR and DVaR Portfolios**
*Benchmarking of Portfolios**

This fact sheets gives an overview about Rmetrics and what is coming next. We recommend also the following contributed R packages: dse, evd, kza, mvtnorm, pastecs, strucchange, systemfit, urca, ...