Rmetrics – Fact Sheet

An Environment for Teaching
Financial Engineering and Computational Finance
with R Rmetrics Built 201.10059

Packages:

1 fBasics

A1 Web Data Import
A2 Basic Statistics
A3 Basic Plots

B1 Hyperbolic Distribution
B2 Stable Distribution
B3 Smoothed Spline Distribution
B4 Distribution Fits

C1 Test Class
C2 One Sample Tests
C3 Two Sample Tests

D1 Stylized Facts

2 fCalendar

A1 Time Data Class
A2 Time Date Methods
A3 Daylight Saving Time Rules

C1 Time Series Class

E5 Holiday Calendars
E6 Holiday Dates

D1 High Frequency Data Tools

3 fSeries

A1 ARMA Modelling
A2 GARCH Modeling
A3 Long Memory Modelling
A4 Chaotic Toime Series
A5 Portable Random Innovations

B1 Time Series Tests
B2 Unitroot Distribution
B3 Unitroot Tests

C1 Heaviside Function
C2 GARCH Distributions
D5 GARCH Distribution Fits

4 fMultivar

A1 Regression Modelling
A2 Regression Tests
A3 Equations Modelling
A4 Equations Tests

State Space Modeling
VARMA and mGARCH

B1 Matrix Addon
B2 Missing Values

C1 Technical Analysis
C2 Benchmark Analysis
C3 Rolling Analysis

5 fExtremes

A1 Extremes Builtin Functions
A2 Extremes Plots
A3 Extremes Data Preprocessing

B1 Generalized Exreme Value Dist
B2 GEV Fit
B3 GEV GLM Fit
B4 Maximim Domain of Attraction Plots

C1 Generalized Pareto Distribution
C2 GPD Fit
C3 GPD GLM Fit
C4 Peak Over Threshold Fit
C5 Point Process Fit
C6 Order Statistic Model Fit

D1 Extreme Index Plots

Bivariate Distributions

Copulae

6 fOptions

A1 Plain Vanilla Options
A2 Basic American Options
A3 Binomial Tree Options

B1 Multiple Exercises Options
B2 Multiple Assets Options
B3 Lookback Options
B4 Barrier Options
B5 Binary Options
B6 Asian Options
B7 Currency Translated Options

C1 Heston-Nandi Garch Fit
C2 Heston-Nandi Options

D1 Low Discrepancy Sequences
D2 Monte Carlo Options

E1 Exponential Brownian Motion
E2 Gamma and Related Functions
E3 Confluent Hypergeometric Functions
E4 Bessel Functions
E4 EBM Asian Options

7 fBonds

Bond Arithmetic

Yield Curve Modeling

Interest Rate Options

Replicated Portfolios

8 fPortfolio

A1 Multivariate Distributions
A2 Assets Modelling
A3 Drawdown Statistics

B1 Value-at-Risk Measures
B2 Markowitz Portfoilio
B3 Two Assets Portfolio

CVaR and CDaR Portfolios

Stock Picking and Portfolio Selection

Portfolio Benchmarks

Topics printed in italic grey are not yet available under Rmetrics 201.10059

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

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