

# 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, ...