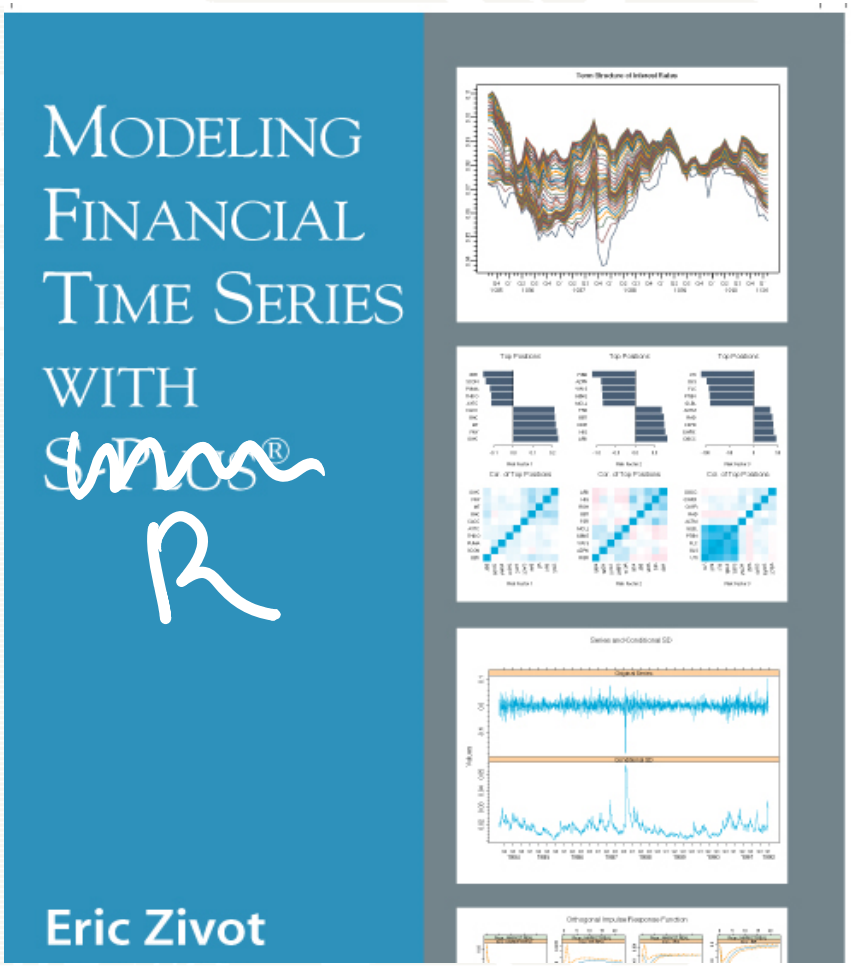
Modeling Financial Time Series with R

- Based on *Modeling Financial Time Series with S-PLUS, Second Edition*
  - *Complete re-write and 5 new chapters*
  - *Extensive use of R packages*
  - *No use of S+FinMetrics code*
  - *Preliminary chapters and code on my website and blog*
  - *Companion package MFTSR on R-forge*
  - *ETA to publisher: October 2014*



Audience and Purpose

- Written for students, researchers and practitioners who need or want to use R for the analysis and forecasting of financial time series
  - Commodities, equity, foreign exchange, hedge-funds, interest rates, valuation ratios, etc.
- Roughly equal treatment of R and statistical models
- User guide for over 20 R packages
- Real world examples

Chapters and R Packages

Chapter	R Packages Used
1. Time Series Specification, Manipulation, and Visualization	**ggplot2, lubridate, PerformanceAnalytics, quantmod, rCharts, zoo, xts, xtsExtra**
2. Time Series Concepts	**car, dynlm, forecast, fracdiff, mFilter, PerformanceAnalytics, quantmod, rugarch, sandwich, tseries**
3. Estimation and Inference	**maxLik**
4. Modeling Univariate Return Distributions	**GeneralizedHyperbolic, PerformanceAnalytics, SkewHyperbolic, sn**
5. Time Series Regression	**AER, car, dynlm, leaps, lmtest, lubridate, quantmod, PerformanceAnalytics, quantreg, sandwich, strucchange, tseries**
6. Unit Roots, Variance Ratios, and Long Memory	**arfima, CADFtest, fracdiff, urca, vrtest**
7. ARIMA Models and Forecasting	**car, dynlm, fanplot, forecast**
8. Univariate Volatility Models	**car, finTS, MFTSR, PerformanceAnalytics, quantmod, rugarch**
9. Technical Analysis of Financial Time Series	**quantmod, ttr, ttrtest**

Chapters and R Packages

Chapter	R Packages Used
10. Modeling Extreme Values	**evir**
11. Nonlinear Time Series Models	**depmixS4, MSwM, tsDyn, twinkle**
12. Continuous-Time Models	**sde, yuima**
13. Modeling High Frequency Financial Time Series	**highfrequency, PIN, TAQMGR**
14. Modeling Multivariate Return Distributions	**copula, mvtnorm, QRMlib, sn, tawny**
15. Vector Autoregressive Models	**vars, urca**
16. Cointegration	**ecgm, MFTSR, urca**
17. Multivariate Volatility and Correlation Models	**ccgarch, MFTSR, rmgarch,**
18. State Space Models	**dlm, dlmodeler, KFAS**
19. Factor Models for Asset Returns	**corrplot, factorAnalytics**
20. Interest Rate Models	**dlm, termstruc, RQuantLib,YieldCurve**
21. Generalized Method of Moments	**AER, dynlm, gmm, systemfit**

MFTSR Package

- All datasets used in book (mostly xts objects) and datasets from *Modeling Financial Time Series with S-PLUS, Second Edition*
- Functions for EWMA modeling and forecasting of univariate volatility and multivariate covariance and correlation
- Functions for cointegration models of price discovery

Need User Feedback!

- Sample chapters and R code to become available (next week) at http://faculty.washington.edu/ezivot/MFTSR.htm
- MFTSR blog at http://blogs.uw.edu/ezivot
- Shiny apps to come!
- Publisher (Springer-Verlag) deadline is October, 2014!