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Likelihood Estimates; 4.7 Partial ACF; 4.8 Order Selections\*; 4.9 Residual Analysis; 4.10 Model Building; 4.11 Exercises; 5 Examples in SPLUS and R; 5.1 Introduction; 5.2 Example 1; 5.3 Example 2 5.4 Exercises; 6 Forecasting; 6.1 Introduction; 6.2 Simple Forecasts; 6.3 Box and Jenkins Approach; 6.4 Treasury Bill Example; 6.5 Recursions\*; 6.6 Exercises; 7 Spectral Analysis; 7.1 Introduction; 7.2 Spectral Representation Theorems; 7.3 Periodogram; 7.4 Smoothing of Periodogram\*; 7.5 Conclusions; 7.6 Exercises; 8 Nonstationarity; 8.1 Introduction; 8.2 Nonstationarity in Variance; 8.3 Nonstationarity in Mean: Random Walk with Drift; 8.4 Unit Root Test; 8.5 Simulations; 8.6 Exercises; 9 Heteroskedasticity; 9.1 Introduction; 9.2 ARCH; 9.3 GARCH; 9.4 Estimation and Testing for ARCH 9.5 Example of Foreign Exchange Rates; 9.6 Exercises; 10 Multivariate Time Series; 10.1 Introduction; 10.2 Estimation of  $\alpha$  and  $\beta$ ; 10.3 Multivariate ARMA Processes; 10.3.1 Causality and Invertibility; 10.3.2 Identifiability; 10.4 Vector AR Models; 10.5 Example of Inferences for VAR; 10.6 Exercises; 11 State Space Models; 11.1 Introduction; 11.2 State Space Representation; 11.3 Kalman Recursions; 11.4 Stochastic Volatility Models; 11.5 Example of Kalman Filtering of Term Structure; 11.6 Exercises; 12 Multivariate GARCH; 12.1 Introduction; 12.2 General Model; 12.3 Quadratic Form 12.3.1 Single-Factor GARCH(1,1); 12.3.2 Constant-Correlation Model; 12.4 Example of Foreign Exchange Rates; 12.4.1 The Data; 12.4.2 Multivariate GARCH in SPLUS; 12.4.3 Prediction; 12.4.4 Predicting Portfolio Conditional Standard Deviations; 12.4.5 BEKK Model; 12.4.6 Vector-Diagonal Models; 12.4.7 ARMA in Conditional Mean; 12.5 Conclusions; 12.6 Exercises; 13 Cointegrations and Common Trends; 13.1 Introduction; 13.2 Definitions and Examples; 13.3 Error Correction Form; 13.4 Granger's Representation Theorem; 13.5 Structure of Cointegrated Systems; 13.6 Statistical Inference for Cointegrated Systems

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## Sommario/riassunto

"This book is designed to help readers grasp the conceptual underpinnings of time series modeling in order to gain a deeper understanding of the ever-changing dynamics of the financial world. It covers theory and application equally for readers from both financial and mathematical backgrounds. The book offers succinct coverage of standard topics in statistical time series - such as forecasting and spectral analysis - in a manner that is both technical and conceptual. Recent developments in nonstandard time series techniques such as Bayesian methods and arbitrage statistics have been added to this edition, and they are illustrated in detail with real financial examples. Subroutines in R and S-Plus are lavishly displayed throughout in this new edition. An author website provides instructor notations and additional software subroutines, as well as complete solutions to the exercises in the text."--

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