AN INTRODUCTION TO THE R PROGRAMMING LANGUAGE WITH APPLICATIONS IN FINANCE AND ECONOMETRICS

PART TWO: TIME SERIES

INTRODUCTION

R Objects for time
Importing data from different sources
Basic manipulation of time series in R

UNIVARIATE TIME SERIES WITH R

Simple Descriptive Techniques
Stationarity and Unit Root Tests
Identification, Estimation and Forecasting:
- ARMA Models.
- SARIMA Models.
- ARMAX Models.

ADVANCED TIME SERIES MODELS

Outier detection
ARFIMA Models.
Nonlinear time series models: TAR. LSTAR. NNET. AAR
Conditional Volatility Models: ARCH, GARCH
Extensions of GARCH models: EGARCH, GJR-GARCH, APGARCH, …

MULTIVARIATE TIME SERIES MODELS

Dynamic Linear Models: Kalman Filtering
Vector Autoregressive Models (VAR)
Vector Error Correction Models (VECM)
Cointegration
Multivariate GARCH Models: GO-GARCH, DCC and Copula-GARCH

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