

# Modelling Nonlinear Economic Time Series

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## Abstract

This book contains an extensive up-to-date overview of nonlinear time series models and their application to modelling economic relationships. It considers nonlinear models in stationary and nonstationary frameworks, and both parametric and nonparametric models are discussed. The book contains examples of nonlinear models in economic theory and presents the most common nonlinear time series models. Importantly, it shows the reader how to apply these models in practice. For this purpose, the building of various nonlinear models with its three stages of model building: specification, estimation and evaluation, is discussed in detail and is illustrated by several examples involving both economic and non-economic data. Since estimation of nonlinear time series models is carried out using

numerical algorithms, the book contains a chapter on estimating parametric nonlinear models and another on estimating nonparametric ones. Forecasting is a major reason for building time series models, linear or nonlinear. The book contains a discussion on forecasting with nonlinear models, both parametric and nonparametric, and considers numerical techniques necessary for computing multi-period forecasts from them. The main focus of the book is on models of the conditional mean, but models of the conditional variance, mainly those of autoregressive conditional heteroskedasticity, receive attention as well. A separate chapter is devoted to state space models. As a whole, the book is an indispensable tool for researchers interested in nonlinear time series and is also suitable for teaching courses in econometrics and time series analysis.

## Suggested Citation

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