

Notes on Economic Time Series Analysis: System Theoretic Perspectives /

Aoki, Masanao

Springer Berlin Heidelberg, 1983

Electronic books Statistics

Monografía

In seminars and graduate level courses I have had several opportunities to discuss modeling and analysis of time series with economists and economic graduate students during the past several years. These experiences made me aware of a gap between what economic graduate students are taught about vector-valued time series and what is available in recent system literature. Wishing to fill or narrow the gap that I suspect is more widely spread than my personal experiences indicate, I have written these notes to augment and reor ganize materials I have given in these courses and seminars. I have endeavored to present, in as much a self-contained way as practicable, a body of results and techniques in system theory that I judge to be relevant and useful to economists interested in using time series in their research. I have essentially acted as an intermediary and interpreter of system theoretic results and perspectives in time series by filtering out non-essential details, and presenting coherent accounts of what I deem to be important but not readily available, or accessible to economists. For this reason I have excluded from the notes many results on various estimation methods or their statistical properties because they are amply discussed in many standard texts on time series or on statistics

Título: Notes on Economic Time Series Analysis: System Theoretic Perspectives by Masanao Aoki

Editorial: Berlin, Heidelberg Springer Berlin Heidelberg 1983

Descripción física: 1 online resource (ix, 249 pages)

Mención de serie: Lecture Notes in Economics and Mathematical Systems 0075-8442 220

Contenido: 1 Introduction -- 2 The Notion of State -- 3 Time-invariant Linear Dynamics -- 3.1 Continuous time systems -- 3.2 Inverse systems -- 3.3 Discrete-time sequences -- 4 Time Series Representation -- 5 Equivalence of ARMA and State Space Models -- 5.1 AR models -- 5.2 MA models -- 5.3 ARMA models -- Examples -- 6 Decomposition of Data into Cyclical and Growth Components -- 6.1 Reference paths and variational dynamic models -- 6.2 Log-linear models as variational models -- 7 Prediction of Time Series -- 7.1 Prediction space -- 7.2 Equivalence -- 7.3 Cholesky decomposition and innovations -- 8 Spectrum and Covariances -- 8.1 Covariance and spectrum -- 8.2 Spectral factorization -- 8.3 Computational aspects -- Sample covariance Matrices -- Example -- 9 Estimation of System Matrices: Initial Phase -- 9.1 System matrices -- 9.2 Approximate model -- 9.3 Rank

determination of Hankel matrices: singular value decomposition theorem -- 9.4 Internally balanced model -example -- 9.5 Inference about the model order -- 9.6 Choices of basis vectors -- 9.7 State space model -- 9.8 ARMA (input-output) model -- 9.9 Canonical correlation -- 10 Innovation Processes -- 10.1 Orthogonal projection -- 10.2 Kaiman filters -- 10.3 Innovation model -- 10.4 Output statistics Kaiman filter -- 10.5 Spectral factorization -- 11 Time Series from Intertemporal Optimization -- 11.1 Example: dynamic resource allocation problem -- 11.2 Quadratic regulation problems -- 11.3 Parametric analysis of optimal solutions -- 12 Identification -- 12.1 Closedloop systems -- 12.2 Identifiability of a closed-loop system -- 13 Time Series from Rational Expectations Models 140 -- 13.1 Moving Average processes -- 13.2 Autoregressive processes -- 13.3 ARMA models -- 13.4 Examples --14 Numerical Examples -- Mathematical Appendices -- References

Copyright/Depósito Legal: 934978657

ISBN: 9783642455650 electronic bk.) 3642455654 electronic bk.) 9783540126966 3540126961

Materia: Economics Economics- Statistics Economics Probability Theory and Stochastic Processes Economic Theory/Quantitative Economics/Mathematical Methods Statistics for Business, Management, Economics, Finance, Insurance

Enlace a formato físico adicional: Print version 9783540126966

Punto acceso adicional serie-Título: Lecture notes in economics and mathematical systems 220

Baratz Innovación Documental

- Gran Vía, 59 28013 Madrid
- (+34) 91 456 03 60
- informa@baratz.es