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Dynamic econometrics for empirical macroeconomic modelling. (English) ‖Zbl 1454.62002‖
Hackensack, NJ: World Scientific (ISBN 978-981-12-0751-8/hbk; 978-981-12-0753-2/ebook). xviii, 567 p. (2020).

From the cover of the book: "In this textbook, the duality between the equilibrium concept used in dynamic economic theory and the stationarity of economic variables is explained and used in the presentation of single equations models and system of equations such as VARs, recursive models and simultaneous equations models.

The book also contains chapters on: exogeneity, in the context of estimation, policy analysis and forecasting; automatic (computer based) variable selection, and how it can aid in the specification of an empirical macroeconomic model; and finally, on a common framework for model-based economic forecasting.

- For Masters and PhD students in Economics
- A concise presentation on the mathematics of difference equations and how it is used in dynamic econometric modelling
- Methods for non-stationary and co-integrated variables
- Structured chapters on automatic methods for variable selection and forecasting with empirical macroeconometric models
- Complete with end-of-chapter exercises and solutions"

The book is very large structured in a Preface, About the Author, Contents, 12 Chapters (divided in 110 subchapters), Appendix A ("A growth model and RBC theory"), Appendix B ("Spectral analysis"), Appendix C ("Answer notes to exercises"), Bibliography, Index:

Chapter 1. Introduction to dynamic macroeconometrics – Chapter 2. Review of econometric theory – Chapter 3. Review of difference equations (with Appendix 3. A: Some results for complex numbers) – Chapter 4. Stationary time series (with Appendix 4. A: Preservation of stationarity by linear filtering) – Chapter 5. The VAR – Chapter 6. Single equation models – Chapter 7. Multiple equation models (with Appendix 7. A: Algebra showing 2SLS and GIV equivalence) – Chapter 8. Exogeneity – Chapter 9. Non-stationarity – Chapter 10. Cointegration – Chapter 11. Automatic variable selection – Chapter 12. Model-based forecasting.

All chapters start with an abstract followed by a subchapter "Introduction" and finish with a subchapter "Exercises". Thus we have 98 Exercises for solving (Answer Notes cp. Appendix C). The book contains 230 references and the index about 800 items. Supplementary materials are hosted at `https://www.worldscientific.com/worldscibooks/10.1142/11479#t=suppl`. For additional exercises, corrections and access to the datasets visit the book's website: `http://normetrics.no/dynamic-econometrics-for-empirical-mac` The book can be recommended to all readers interested in this field.

Reviewer: Ludwig Paditz (Dresden)

MSC:

62-01	Introductory exposition (textbooks, tutorial papers, etc.) pertaining to statistics
62M10	Time series, auto-correlation, regression, etc. in statistics (GARCH)
62P20	Applications of statistics to economics
91-01	Introductory exposition (textbooks, tutorial papers, etc.) pertaining to game theory, economics, and finance
91B62	Economic growth models
91B64	Macroeconomic theory (monetary models, models of taxation)
39A06	Linear difference equations
39A50	Stochastic difference equations

Keywords:

time series econometrics; macroeconometric modelling; multiple equation models; equilibrium concept;

dynamic economics; stationary and non-stationary time series; difference equations; stochastic difference equations; vector autoregressive systems (VAR); recursive and simultaneous equations models; model-based economic forecasting; Bayesian methods; testing of empirical macromodels

Software:

PcGive; R

Full Text: DOI