Applied Statistics And Econometrics Notes And Exercises

Can there be God-conscious organizational behaviour in the real world of today's capitalist corporations and the alternatives? In this overview of God-consciousness as a moral-awareness model of preference formation, functions, structures, and programs of organization within the purview of institutions and society, the authors explain and compare the major ethical issues of organizational behaviour and structure in Islamic economic theory and application. By analysing the nature of inclusive organizations and institutions, and the ethical preferences in Islamic choice framework, the authors from Saudi Arabia, Australia, Malaysia, Bangladesh, Canada, Indonesia and the UK, can highlight individual aspects to show whether capitalist organizational behaviour is sustainable. They describe how The Tawhidi epistemological framework governing conscious moral decision-making by institutions and organization, are used to establish the meaning and potential application of the concept of sustainability, and whether organizational moral objectives achieve their goals of life-fulfilment development, Poverty alleviation and the equitable distribution of wealth and resources.

This book expands on the classical statistical multivariate analysis theory by focusing on bilinear regression models, a class of models comprising the classical growth curve model and its extensions. In order to analyze the bilinear regression models in an interpretable way, concepts from linear models are extended and applied to tensor spaces. Further, the book considers decompositions of tensor products into natural subspaces, and addresses maximum likelihood estimation, residual analysis, influential observation analysis and testing hypotheses, where properties of estimators such as moments, asymptotic distributions or approximations of distributions are also studied. Throughout the text, examples and several analyzed data sets illustrate the different approaches, and fresh insights into classical multivariate analysis are provided. This monograph is of interest to researchers and Ph.D. students in mathematical statistics, signal processing and other fields where statistical multivariate analysis is utilized. It can also be used as a text for second graduate-level courses on multivariate analysis.

This volume is based on the invited and the contributed presentations given at the Indo-U.S. Workshop on Bayesian Analysis in Statistics and Econometrics (BASE), Dec. 19-23, 1988, held at the Hotel Taj Residency, Bangalore, India. The workshop was jointly sponsored by The Ohio State University, The Indian Statistical Institute, The Indian Econometrics So ciety, U.S. National Science Foundation and the NSF-NBER Seminar on Bayesian Inference in Econometrics. Profs. Morrie DeGroot, Prem Goel, and Arnold Zellner were the program organizers. Unfortunately, Morrie became seriously ill just before the workshop was to start and could not participate in the workshop. Almost a year later, Morrie passed away after fighting valiantly with the illness. Not to find Morrie among ourselves was a shock for most of us. He was a continuous source of inspiration and ideas. Even while Morrie was fighting for his life, we had a lot of discussions about the contents of this volume and the Bangalore Workshop. He even talked about organizing a Second Indo-U.S. workshop some time in the near future. We are dedicating this volume to the memory of Prof. Morris H. DeGroot. We have taken a conscious decision not to include any biography of Morrie in this volume. An excellent biography of Morrie has appeared in Statistical Science [(1991), vol. 6, 1-14], and we could not have done a better job than that.

Do you want to recognize the most suitable models for analysis of statistical data sets? This book provides a hands-on practical guide to using the most suitable models for analysis of statistical data sets using EViews - an interactive Windows-based computer software program for sophisticated data analysis, regression, and forecasting - to define and test statistical hypotheses. Rich in examples and with an emphasis

on how to develop acceptable statistical models, Time Series Data Analysis Using EViews is a perfect complement to theoretical books presenting statistical or econometric models for time series data. The procedures introduced are easily extendible to cross-section data sets. The author: Provides step-by-step directions on how to apply EViews software to time series data analysis Offers guidance on how to develop and evaluate alternative empirical models, permitting the most appropriate to be selected without the need for computational formulae Examines a variety of times series models, including continuous growth, discontinuous growth, seemingly causal, regression, ARCH, and GARCH as well as a general form of nonlinear time series and nonparametric models Gives over 250 illustrative examples and notes based on the author's own empirical findings, allowing the advantages and limitations of each model to be understood Describes the theory behind the models in comprehensive appendices Provides supplementary information and data sets An essential tool for advanced undergraduate and graduate students taking finance or econometrics courses. Statistics, life sciences, and social science students, as well as applied researchers, will also find this book an invaluable resource.

Autobiographical accounts by Nobel laureates reflect the richness and diversity of contemporary economic thought and offer insights into the creative process; with six new laureates. Lives of the Laureates offers readers an informal history of modern economic thought as told through autobiographical essays by thirty-two Nobel Prize laureates in economics. The essays not only provide unique insights into major economic ideas of our time but also shed light on the processes of intellectual discovery and creativity. The accounts are accessible and engaging, achieving clarity without sacrificing inherently difficult content. This seventh edition adds six Nobelists to its pages: Roger B. Myerson (co-recipient in 2007) describes his evolution as a game theorist and his application of game theory to issues that ranged from electoral systems to perverse incentives; Thomas J. Sargent (co-recipient in 2011), recounts the development of the rational expectations model, which fundamentally changed the policy implications for macroeconomic models; Amartya Sen (recipient in 1998) reflects on his use of a bicycle (later donated to the Nobel Museum) to collect data early in his career; A. Michael Spence (co-recipient in 2001) describes, among other things, his whiplash-inducing first foray into teaching an undergraduate class; Christopher A. Sims (co-recipient in 2011) discusses his “non-Nobel” research; and Alvin E. Roth (co-recipient in 2012) chronicles the “three insurrections” he has witnessed in mainstream economics. Lives of the Laureates grows out of a continuing lecture series at Trinity University in San Antonio, which invites Nobelists from American universities to describe their evolution as economists in personal as well as technical terms. The Laureates W. Arthur Lewis, Lawrence R. Klein, Kenneth J. Arrow, Paul A. Samuelson, Milton Friedman, George J. Stigler, James Tobin, Franco Modigliani, James M. Buchanan, Robert M. Solow, William F. Sharpe, Ronald H. Coase, Douglass C. North, John C. Harsanyi, Myron S. Scholes, Gary S. Becker, Robert E. Lucas, Jr., Vernon L. Smith, Clive W. J. Granger, Edward C. Prescott, Thomas C. Schelling, Edmund S. Phelps, Eric S. Maskin, Joseph E. Stiglitz, Paul Krugman, Peter A. Diamond, Roger B. Myerson, Thomas J. Sargent, Amartya Sen, A. Michael Spence, Christopher A. Sims, Alvin E. Roth

This is the first volume in a trilogy on modern Signal Processing. The three books provide a concise exposition of signal processing topics, and a guide to support individual practical exploration based on MATLAB programs. This book includes MATLAB codes to illustrate each of the main steps of the theory, offering a self-contained guide suitable for independent study. The code is embedded in the text, helping readers to put into practice the ideas and methods discussed. The book is divided into three parts, the first of which introduces readers to periodic and non-periodic signals. The second part is devoted to filtering, which is an important and commonly used application. The third part addresses more advanced topics, including the analysis of real-world non-stationary signals and data, e.g. structural fatigue, earthquakes,

electro-encephalograms, birdsong, etc. The book's last chapter focuses on modulation, an example of the intentional use of non-stationary signals.

An Introductory Econometrics Text Mathematical Statistics for Applied Econometrics covers the basics of statistical inference in support of a subsequent course on classical econometrics. The book shows students how mathematical statistics concepts form the basis of econometric formulations. It also helps them think about statistics as more than a toolbox of techniques. Uses Computer Systems to Simplify Computation The text explores the unifying themes involved in quantifying sample information to make inferences. After developing the necessary probability theory, it presents the concepts of estimation, such as convergence, point estimators, confidence intervals, and hypothesis tests. The text then shifts from a general development of mathematical statistics to focus on applications particularly popular in economics. It delves into matrix analysis, linear models, and nonlinear econometric techniques. Students Understand the Reasons for the Results Avoiding a cookbook approach to econometrics, this textbook develops students' theoretical understanding of statistical tools and econometric applications. It provides them with the foundation for further econometric studies.

This text presents statistical methods for studying causal effects and discusses how readers can assess such effects in simple randomized experiments.

Combines technique with application using real data sets. The core of the book (Chapters 1-13) covers the basic statistical concepts necessary for econometrics with an emphasis on regression analysis. Part V is a treatment of advanced econometrics theory.

Mainly focusing on processing uncertainty, this book presents state-of-the-art techniques and demonstrates their use in applications to econometrics and other areas. Processing uncertainty is essential, considering that computers – which help us understand real-life processes and make better decisions based on that understanding – get their information from measurements or from expert estimates, neither of which is ever 100% accurate. Measurement uncertainty is usually described using probabilistic techniques, while uncertainty in expert estimates is often described using fuzzy techniques. Therefore, it is important to master both techniques for processing data. This book is highly recommended for researchers and students interested in the latest results and challenges in uncertainty, as well as practitioners who want to learn how to use the corresponding state-of-the-art techniques.

This book focuses on structural changes and economic modeling. It presents papers describing how to model structural changes, as well as those introducing improvements to the existing before-structural-changes models, making it easier to later on combine these models with techniques describing structural changes. The book also includes related theoretical developments and practical applications of the resulting techniques to economic problems. Most traditional mathematical models of economic processes describe how the corresponding quantities change with time. However, in addition to such relatively smooth numerical changes, economical phenomena often undergo more drastic structural change. Describing such structural changes is not easy, but it is vital if we want to have a more adequate description of economic phenomena – and thus, more accurate and more reliable predictions and a better understanding on how best to influence the economic situation.

This volume presents a new perspective for discussing the European social contract and its main challenges, bringing together

single-nation and comparative studies from across Europe. Presenting both theoretical discussions and empirical case studies, it explores various aspects of social cohesion, including social protection, the labour market, social movements, healthcare, social inequalities and poverty. With particular attention to the effects of the international economic and financial crisis on social cohesion, particularly in the light of the implementation of so-called 'austerity measures', authors engage with questions surrounding the possible fragmentation of the European model of social cohesion and the transformation of forms of social protection, asking whether social cohesion continues to represent - if it ever did - a common feature of European countries. Breaking new ground in understanding the future of Social Europe and its main dynamics of change, The European Social Model Adrift will appeal to scholars of sociology, social policy and politics, with interests in social cohesion, the effects of financial crisis and the European social model.

Economists have employed numerical information to understand economic phenomena since the origins of the modern discipline in the seventeenth century. While the methods for assessing such information are increasingly sophisticated, we continue to be interested in identifying and understanding trends and patterns in economic data. This text is an introduction to some of the tried-and-true quantitative methods used by economists. Its goal is to give students a background in these methods so they might do empirical economics in their upper-division economics courses. Hitherto, most economists have been forced to resort to business statistics or even general statistics texts in order to introduce quantitative methods to economists. This text moves beyond those and includes a wealth of examples and applications that are specifically relevant to economics

This book presents statistical methods for analysis of the duration of events. The primary focus is on models for single-spell data, events in which individual agents are observed for a single duration. Some attention is also given to multiple-spell data. The first part of the book covers model specification, including both structural and reduced form models and models with and without neglected heterogeneity. The book next deals with likelihood based inference about such models, with sections on full and semiparametric specification. A final section treats graphical and numerical methods of specification testing. This is the first published exposition of current econometric methods for the study of duration data.

Applied Data Mining for Forecasting Using SAS, by Tim Rey, Arthur Kordon, and Chip Wells, introduces and describes approaches for mining large time series data sets. Written for forecasting practitioners, engineers, statisticians, and economists, the book details how to select useful candidate input variables for time series regression models in environments when the number of candidates is large, and identifies the correlation structure between selected candidate inputs and the forecast variable. This book is essential for forecasting practitioners who need to understand the practical issues involved in applied forecasting in a business setting. Through numerous real-world examples, the authors demonstrate how to effectively use SAS software to meet their industrial forecasting needs. This book is part of the SAS Press program.

Concerned with the use of generalised linear models for univariate and multivariate regression analysis, this is a detailed introductory survey of the subject, based on the analysis of real data drawn from a variety of subjects such as the biological

sciences, economics, and the social sciences. Where possible, technical details and proofs are deferred to an appendix in order to provide an accessible account for non-experts. Topics covered include: models for multi-categorical responses, model checking, time series and longitudinal data, random effects models, and state-space models. Throughout, the authors have taken great pains to discuss the underlying theoretical ideas in ways that relate well to the data at hand. As a result, numerous researchers whose work relies on the use of these models will find this an invaluable account.

The importance of experimental economics and econometric methods increases with each passing day as data quality and software performance develops. New econometric models are developed by diverging from earlier cliché econometric models with the emergence of specialized fields of study. This book, which is expected to be an extensive and useful reference by bringing together some of the latest developments in the field of econometrics, also contains quantitative examples and problem sets. We thank all the authors who contributed to this book with their studies that provide extensive and accessible explanations of the existing econometric methods.

The proliferation of the internet has often been referred to as the fourth technological revolution. This book explores the diffusion of radical new communication technologies, and the subsequent transformation not only of products, but also of the organisation of production and business methods.

This textbook will familiarize students in economics and business, as well as practitioners, with the basic principles, techniques, and applications of applied statistics, statistical testing, and multivariate data analysis. Drawing on practical examples from the business world, it demonstrates the methods of univariate, bivariate, and multivariate statistical analysis. The textbook covers a range of topics, from data collection and scaling to the presentation and simple univariate analysis of quantitative data, while also providing advanced analytical procedures for assessing multivariate relationships. Accordingly, it addresses all topics typically covered in university courses on statistics and advanced applied data analysis. In addition, it does not limit itself to presenting applied methods, but also discusses the related use of Excel, SPSS, and Stata.

The author's research has been directed towards inference involving observables rather than parameters. In this book, he brings together his views on predictive or observable inference and its advantages over parametric inference. While the book discusses a variety of approaches to prediction including those based on parametric, nonparametric, and nonstochastic statistical models, it is devoted mainly to predictive applications of the Bayesian approach. It not only substitutes predictive analyses for parametric analyses, but it also presents predictive analyses that have no real parametric analogues. It demonstrates that predictive inference can be a critical component of even strict parametric inference when dealing with interim analyses. This approach to predictive inference will be of interest to statisticians,

psychologists, econometricians, and sociologists.

The standard introductory texts to mathematical statistics leave the Bayesian approach to be taught later in advanced topics courses—giving students the impression that Bayesian statistics provide but a few techniques appropriate in only special circumstances. Nothing could be further from the truth, argues Dale Poirier, who has developed a course for teaching comparatively both the classical and the Bayesian approaches to econometrics. Poirier's text provides a thoroughly modern, self-contained, comprehensive, and accessible treatment of the probability and statistical foundations of econometrics with special emphasis on the linear regression model. Written primarily for advanced undergraduate and graduate students who are pursuing research careers in economics, Intermediate Statistics and Econometrics offers a broad perspective, bringing together a great deal of diverse material. Its comparative approach, emphasis on regression and prediction, and numerous exercises and references provide a solid foundation for subsequent courses in econometrics and will prove a valuable resource to many nonspecialists who want to update their quantitative skills. The introduction closes with an example of a real-world data set—the Challenger space shuttle disaster—that motivates much of the text's theoretical discussion. The ten chapters that follow cover basic concepts, special distributions, distributions of functions of random variables, sampling theory, estimation, hypothesis testing, prediction, and the linear regression model. Appendixes contain a review of matrix algebra, computation, and statistical tables.

This is the perfect (and essential) supplement for all econometrics classes--from a rigorous first undergraduate course, to a first master's, to a PhD course. Explains what is going on in textbooks full of proofs and formulas Offers intuition, skepticism, insights, humor, and practical advice (dos and don’ts) Contains new chapters that cover instrumental variables and computational considerations Includes additional information on GMM, nonparametrics, and an introduction to wavelets

This book is aimed at a wide range of readers who lack confidence in the mathematical and statistical sciences, particularly in the fields of Agriculture, Veterinary, Fishery, Dairy and other related areas. Its goal is to present the subject of statistics and its useful tools in various disciplines in such a manner that, after reading the book, readers will be equipped to apply the statistical tools to extract otherwise hidden information from their data sets with confidence. Starting with the meaning of statistics, the book introduces measures of central tendency, dispersion, association, sampling methods, probability, inference, designs of experiments and many other subjects of interest in a step-by-step and lucid manner. The relevant theories are described in detail, followed by a broad range of real-world worked-out examples, solved either manually or with the help of statistical packages. In closing, the book also includes a chapter on which statistical packages to use, depending on the user’s respective requirements.

Panel Data Econometrics: Theory introduces econometric modelling. Written by experts from diverse disciplines, the volume uses longitudinal datasets to illuminate applications for a variety of fields, such as banking, financial markets, tourism and transportation, auctions, and experimental economics. Contributors emphasize techniques and applications, and they accompany their explanations with case studies, empirical exercises and supplementary code in R. They also address panel data analysis in the context of productivity and efficiency analysis, where some of the most interesting applications and advancements have recently been made. Provides a vast array of empirical applications useful to practitioners from different application environments Accompanied by extensive case studies and empirical exercises Includes empirical chapters accompanied by supplementary code in R, helping researchers replicate findings Represents an accessible resource for diverse industries, including health, transportation, tourism, economic growth, and banking, where researchers are not always econometrics experts

Econometrics is becoming a highly developed and highly mathematicized array of its own sub disciplines, as it should be, as economies are becoming increasingly complex, and scientific economic analyses require progressively thorough knowledge of solid quantitative methods. This book thus provides recent insight on some key issues in econometric theory and applications. The volume first focuses on three recent advances in econometric theory: non-parametric estimation, instrument generating functions, and seasonal volatility models. Additionally, three recent econometric applications are presented: continuous time duration analysis, panel data analysis dealing with endogeneity and selectivity biases, and seemingly unrelated regression analysis. Intended as an electronic edition, providing immediate "open access" to its content, the book is easy to follow and will be of interest to professionals involved in econometrics.

R is a language and environment for data analysis and graphics. It may be considered an implementation of S, an award-winning language initially - veloped at Bell Laboratories since the late 1970s. The R project was initiated by Robert Gentleman and Ross Ihaka at the University of Auckland, New Zealand, in the early 1990s, and has been developed by an international team since mid-1997. Historically, econometricians have favored other computing environments, some of which have fallen by the wayside, and also a variety of packages with canned routines. We believe that R has great potential in econometrics, both for research and for teaching. There are at least three reasons for this: (1) R is mostly platform independent and runs on Microsoft Windows, the Mac family of operating systems, and various ?avors of Unix/Linux, and also on some more exotic platforms. (2) R is free software that can be downloaded and installed at no cost from a family of mirror sites around the globe, the Comprehensive R Archive Network (CRAN); hence students can easily install it on their own machines. (3) R is open-source software, so that the full source code is available and can be inspected to understand what it really does, learn from it, and modify and extend it. We also like to think that platform independence and the open-source philosophy make R an ideal environment for reproducible econometric research.

A popular, intuitively based overview of econometrics.

This book provides the most comprehensive treatment to date of microeconometrics, the analysis of individual-level data on the economic behavior of individuals or firms using regression methods for cross section and panel data. The book is oriented to the practitioner. A basic understanding of the linear regression model with matrix algebra is assumed. The text can be used for a microeconometrics course, typically

a second-year economics PhD course; for data-oriented applied microeconometrics field courses; and as a reference work for graduate students and applied researchers who wish to fill in gaps in their toolkit. Distinguishing features of the book include emphasis on nonlinear models and robust inference, simulation-based estimation, and problems of complex survey data. The book makes frequent use of numerical examples based on generated data to illustrate the key models and methods. More substantially, it systematically integrates into the text empirical illustrations based on seven large and exceptionally rich data sets.

The majority of empirical research in economics ignores the potential benefits of nonparametric methods, while the majority of advances in nonparametric theory ignores the problems faced in applied econometrics. This book helps bridge this gap between applied economists and theoretical nonparametric econometricians. It discusses in depth, and in terms that someone with only one year of graduate econometrics can understand, basic to advanced nonparametric methods. The analysis starts with density estimation and motivates the procedures through methods that should be familiar to the reader. It then moves on to kernel regression, estimation with discrete data, and advanced methods such as estimation with panel data and instrumental variables models. The book pays close attention to the issues that arise with programming, computing speed, and application. In each chapter, the methods discussed are applied to actual data, paying attention to presentation of results and potential pitfalls.

Modern financial management is largely about risk management, which is increasingly data-driven. The problem is how to extract information from the data overload. It is here that advanced statistical and machine learning techniques can help. Accordingly, finance, statistics, and data analytics go hand in hand. The purpose of this book is to bring the state-of-art research in these three areas to the fore and especially research that juxtaposes these three.

For some seven decades, econometrics has been almost exclusiveley dealing with constructing and applying econometric equation systems, which constitute constraints in econometric optimization models. The second major component, the scalarvalued objective function, has only in recent years attracted more attention and some progress has been made. This book is devoted to theories, models and methods for constructing scalarvalued objective functions for econometric optimization models, to their applications, and to some related topics like historical issues about pioneering contributions by Ragnar Frisch and Jan Tinbergen.

CD-ROM included contains Polystat and sample data sets.

Quantitative social science research has been expanding due to the ava- ability of computers and data over the past few decades. Yet the textbooks and supplements for researchers do not adequately highlight the revolution created by the R software [2] and graphics system. R is fast becoming the l- gua franca of quantitative research with some 2000 free specialized packages, where the latest versions can be downloaded in seconds. Many packages such as “car” [1] developed by social scientists are popular among all scientists. An early 2009 article [3] in the New York Times notes that statisticians, engineers and scientists without computer programming skills ?nd R “easy to use.” A common language R can readily promote deeper mutual respect and understanding of unique problems facing quantitative work in various social sciences. Often the solutions developed in one ?eld can be extended and used in many ?elds. This book promotes just such exchange of ideas across many social sciences. Since Springer has played a leadership role in promoting R, we are fortunate to have Springer publish this book. A Conference on Quantitative Social Science Research Using R was held in New York City at the Lincoln Center campus of Fordham University, June 18–19, 2009. This book contains selected papers presented at the conference, representing the “Proceedings” of the conference.

Mathematical Statistics for Applied EconometricsCRC Press

Bayesian methods combine the evidence from the data at hand with previous quantitative knowledge to analyse practical problems in a wide range of areas. The calculations were previously complex, but it is now possible to routinely apply Bayesian methods due to advances in computing technology and the use of new sampling methods for estimating parameters. Such developments together with the availability of freeware such as WINBUGS and R have facilitated a rapid growth in the use of Bayesian methods, allowing their application in many scientific disciplines, including applied statistics, public health research, medical science, the social sciences and economics. Following the success of the first edition, this reworked and updated book provides an accessible approach to Bayesian computing and analysis, with an emphasis on the principles of prior selection, identification and the interpretation of real data sets. The second edition: Provides an integrated presentation of theory, examples, applications and computer algorithms. Discusses the role of Markov Chain Monte Carlo methods in computing and estimation. Includes a wide range of interdisciplinary applications, and a large selection of worked examples from the health and social sciences. Features a comprehensive range of methodologies and modelling techniques, and examines model fitting in practice using Bayesian principles. Provides exercises designed to help reinforce the reader's knowledge and a supplementary website containing data sets and relevant programs. Bayesian Statistical Modelling is ideal for researchers in applied statistics, medical science, public health and the social sciences, who will benefit greatly from the examples and applications featured. The book will also appeal to graduate students of applied statistics, data analysis and Bayesian methods, and will provide a great source of reference for both researchers and students. Praise for the First Edition: "It is a remarkable achievement to have carried out such a range of analysis on such a range of data sets. I found this book comprehensive and stimulating, and was thoroughly impressed with both the depth and the range of the discussions it contains." – ISI - Short Book Reviews "This is an excellent introductory book on Bayesian modelling techniques and data analysis" – Biometrics "The book fills an important niche in the statistical literature and should be a very valuable resource for students and professionals who are utilizing Bayesian methods." – Journal of Mathematical Psychology

This book brings together the issues of optimal testing for misspecification in econometric modelling, the method of recent development in model selection and model testing with reference to applications in real data sets. It is ideal as a reference for s

High-frequency trading is an algorithm-based computerized trading practice that allows firms to trade stocks in milliseconds. Over the last fifteen years, the use of statistical and econometric methods for analyzing high-frequency financial data has grown exponentially. This growth has been driven by the increasing availability of such data, the technological advancements that make high-frequency trading strategies possible, and the need of practitioners to analyze these data. This comprehensive book introduces readers to these emerging methods and tools of analysis. Yacine Aït-Sahalia and Jean Jacod cover the mathematical foundations of stochastic processes, describe the primary characteristics of high-frequency financial data, and present the asymptotic concepts that their analysis relies on. Aït-Sahalia and Jacod also deal with estimation of the volatility portion of the model, including methods that are robust to market microstructure noise, and address estimation and testing questions involving the jump part of the model. As they demonstrate, the practical importance and relevance of jumps in financial data are universally recognized, but only recently have econometric methods become available to rigorously analyze jump processes. Aït-Sahalia and Jacod approach high-frequency econometrics with a distinct focus on the financial side of matters while maintaining technical rigor, which makes this book invaluable to researchers and practitioners alike.

This textbook is a comprehensive introduction to applied spatial data analysis using R. Each chapter walks the reader through a different

method, explaining how to interpret the results and what conclusions can be drawn. The author team showcases key topics, including unsupervised learning, causal inference, spatial weight matrices, spatial econometrics, heterogeneity and bootstrapping. It is accompanied by a suite of data and R code on Github to help readers practise techniques via replication and exercises. This text will be a valuable resource for advanced students of econometrics, spatial planning and regional science. It will also be suitable for researchers and data scientists working with spatial data.