

Asymptotic Theory For Econometricians Revised Edition Economic Theory Econometrics And Mathematical Economics Economic Theory Econometrics Mathematical Economics

The second edition of a comprehensive state-of-the-art graduate level text on microeconomic methods, substantially revised and updated. The second edition of this acclaimed graduate text provides a unified treatment of two methods used in contemporary econometric research, cross section and data panel methods. By focusing on assumptions that can be given behavioral content, the book maintains an appropriate level of rigor while emphasizing intuitive thinking. The analysis covers both linear and nonlinear models, including models with dynamics and/or individual heterogeneity. In addition to general estimation frameworks (particular methods of moments and maximum likelihood), specific linear and nonlinear methods are covered in detail, including probit and logit models and their multivariate, Tobit models, models for count data, censored and missing data schemes, causal (or treatment) effects, and duration analysis. Econometric Analysis of Cross Section and Panel Data was the first graduate econometrics text to focus on microeconomic data structures, allowing assumptions to be separated into population and sampling assumptions. This second edition has been substantially updated and revised. Improvements include a broader class of models for missing data problems, more detailed treatment of cluster problems, an important topic for empirical researchers; expanded discussion of "generalized instrumental variables" (GIV) estimation; new coverage (based on the author's own recent research) of inverse probability weighting; a more complete framework for estimating treatment effects with panel data, and a firmly established link between econometric approaches to nonlinear panel data and the "generalized estimating equation" literature popular in statistics and other fields. New attention is given to explaining when particular econometric methods can be applied; the goal is not only to tell readers what does work, but why certain "obvious" procedures do not. The numerous included exercises, both theoretical and computer-based, allow the reader to extend methods covered in the text and discover new insights.

This unique book delivers an encyclopedic treatment of classic as well as contemporary large sample theory, dealing with both statistical problems and probabilistic issues and tools. The book is unique in its detailed coverage of fundamental topics. It is written in an extremely lucid style, with an emphasis on the conceptual discussion of the importance of a problem and the impact and relevance of the theorems. There is no other book in large sample theory that matches this book in coverage, exercises and examples, bibliography, and lucid conceptual discussion of issues and theorems.

Bootstrap technique is a useful tool for assessing uncertainty in statistical estimation and thus it is widely applied for risk management. Bootstrap is without doubt a promising technique, however, it is not applicable to all time series models. A wrong application could lead to a false decision to take too much risk. Kenichi Shimizu investigates the limit of the two standard bootstrap techniques, the residual and the wild bootstrap, when these are applied to the conditionally heteroscedastic models, such as the ARCH and GARCH models. The author shows that the wild bootstrap usually does not work well when one estimates conditional heteroscedasticity of Engle's ARCH or Bollerslev's GARCH models while the residual bootstrap works without problems. Simulation studies from the application of the proposed bootstrap methods are demonstrated together with the theoretical investigation.

This is a survey of the recent developments in the rapidly expanding field of asymptotic distribution theory, with a special emphasis on the problems of time dependence and heterogeneity. The book is designed to be useful on two levels. First as a textbook and reference work, giving definitions of the relevant mathematical concepts, statements, and proofs of the important results from the probability literature, and numerous examples; and second, as an account of recent work in the field of particular interest to econometricians, including a number of important new results. It is virtually self-contained, with all but the most basic technical prerequisites being explained in their context; mathematical topics include measure theory, integration, metric spaces, and topology, with applications to random variables, and an extended treatment of conditional probability. Other subjects treated include: stochastic processes, mixing processes, martingales, mixingsales, and near-epoch dependence; the weak and strong laws of large numbers; weak convergence; and central limit theorems for nonstationary and dependent processes. The functional central limit theorem and its ramifications are covered in detail, including an account of the theoretical underpinnings (the weak convergence of measures on metric spaces). Brownian motion, the multivariate invariance principle, and convergence to stochastic integrals. This material is of special relevance to the theory of cointegration.

A Volume in Honor of George Judge

Stochastic Limit Theory

Essays in Honor of Halbert L. White Jr

Robust Methods and Asymptotic Theory in Nonlinear Econometrics

Methods and Applications

12 Daniel Felsenstein and Boris A. Portnov 1 Department of Geography, Hebrew University of Jerusalem, Israel 2 Department of Natural Resources and Environmental Management, University of Haifa, Israel During the Candiot War of 1645-1669, the Ottoman Sultan Ibrahim I ordered his chief admiral to attack Malta. Fearing imminent defeat by the superior Venetian forces stationed on the island, the admiral decided to trick the sultan out of the idea. As the story goes, he placed a candle on his naval map, allowing the wax to drip on the tiny island until it was completely covered. Then he exclaimed in false surprise, "Malta Yok!" (There is no Malta!), and convinced the sultan to sail his fleet to the Island of Crete instead. Although Malta is not featured in this volume, most of the countries it covers are of "wax drip" size. Intuitively, it may be expected that everything in small countries is diminutive: distances, population, economies, and even regional inequalities. Thus, at a symposium on "The Challenge of Development" convened in Israel in 1957 to mark the inauguration of a new building for the Department of Economics at the Hebrew University of Jerusalem, the eminent US economist Simon Kuznets stated that "developed small states seem to have succeeded in spreading the fruits of economic growth more widely among their populations than the larger states at comparable levels of income per capita".

This book presents the huge variety of current contributions of game theory to economics. The impressive contributions fall broadly into two categories. Some lay out in a jargon free manner a particular branch of the theory, the evolution of one of its concepts, or a problem, that runs through its development. Others are original pieces of work that are significant to game theory as a whole. After taking the reader through a concise history of game theory, the contributions include such themes as: *the connections between Von Neumann's mathematical game theory and the domain assigned to him today *the strategic use of information by game players *the problem of the coordination of strategic choices between independent players *cooperative games and their place within the literature of games plus new developments in non-cooperative games *possible applications for game theory in industrial and financial economics differential qualitative games and entry dissuasion.

Now in its fourth edition, this comprehensive introduction of fundamental panel data methodologies provides insights on what is most essential in panel literature. A capstone to the forty-year career of a pioneer of panel data analysis, this new edition's primary contribution will be the coverage of advancements in panel data analysis, a statistical method widely used to analyze two or higher-dimensional panel data. The topics discussed in early editions have been reorganized and streamlined to comprehensively introduce panel econometric methodologies useful for identifying causal relationships among variables, supported by interdisciplinary examples and case studies. This book, to be featured in Cambridge's Econometric Society Monographs series, has been the leader in the field since the first edition. It is essential reading for researchers, practitioners and graduate students interested in the analysis of microeconomic behavior.

This book is a collection of articles that present the most recent cutting edge results on specification and estimation of economic models written by a number of the world's foremost leaders in the fields of theoretical and methodological econometrics. Recent advances in asymptotic approximation theory, including the use of higher order asymptotics for things like estimator bias correction, and the use of various expansion and other theoretical tools for the development of bootstrap techniques designed for implementation when carrying out inference are at the forefront of theoretical development in the field of econometrics. One important feature of these advances in the theory of econometrics is that they are being seamlessly and almost immediately incorporated into the "empirical toolbox" that applied practitioners use when actually constructing models using data, for the purposes of both prediction and policy analysis and the more theoretically targeted chapters in the book will discuss these developments. Turning now to empirical methodology, chapters on prediction methodology will focus on macroeconomic and financial applications, such as the construction of diffusion index models for forecasting with very large numbers of variables, and the construction of data samples that result in optimal predictive accuracy tests when comparing alternative prediction models. Chapters carefully outline how applied practitioners can correctly implement the latest theoretical refinements in model specification in order to "build" the best models using large-scale and traditional datasets, making the book of interest to a broad readership of economists from theoretical econometricians to applied economic practitioners.

Intermediate Statistics and Econometrics

Analysis of Panel Data

Readings in Econometric Theory and Practice

An Introduction for Econometricians

A Comparative Approach

An econometric estimator is a solution to an optimization problem. This book provides the tools and concepts necessary to study the behavior of econometric estimators and test statistics in large samples.

The promising new directions for research and applications described here include alternative model specifications, estimators and tests for regression models with limited dependent variables and space-time data.

An Introduction to Econometrics Text Mathematical Statistics for Applied Econometricians covers the basics of statistical inference in a subset 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 book is an introduction to the field of asymptotic statistics. The treatment is both practical and mathematically rigorous. In addition to most of the standard topics of an asymptotics course, including likelihood inference, M-estimation, the theory of asymptotic efficiency, U-statistics, and rank procedures, the book also presents recent research topics such as semiparametric models, the bootstrap, and empirical processes and their applications. The topics are organized from the central idea of approximation by limit experiments, which gives the book one of its unifying themes. This entails mainly the local approximation of the classical i.i.d. set up with smooth parameters by location experiments involving a single, normally distributed observation. Thus, even the standard subjects of asymptotic statistics are presented in a novel way. Suitable as a

graduate or Master's level statistics text, this book will also give researchers an overview of the latest research in asymptotic statistics.

Fixed Smoothing Asymptotic Theory in Over-identified Econometric Models in the Presence of Time-series and Clustered Dependence

Estimation, Inference and Specification Analysis

A Guide to Econometrics

Microeconometrics

Asymptotic Theory for Econometricians

The University of Genoa - Ohio State University Joint Conference on New Trends in Systems Theory was held at the Badia di S. Andrea in Genoa on July 9-11, 1990. This Proceedings volume contains articles based on two of the three Plenary talks and most of the shorter presentations. The papers are arranged by author, and no attempt has been made to organize them by topic. We would like to thank the members of the Committee of the Program Committee, the speakers and authors, and everyone who attended the conference. Approximately 120 researchers and students from all over the world visited Genoa for the meeting, representing a wide spectrum of analysis in pure and applied control and systems theory. The success of the conference depended on the high level of scientific and engineering expertise, not to mention their enthusiasm. The Conference on New Trends in Systems Theory would not have been possible without the help of a great many institutions and people. We would like to thank the University of Genoa, particularly Professor Enrico Beltrametti, and the Ohio State University's Columbian Quinqucentary Committee led by Professor Christian Zacher, for encouragement and financial assistance. The University of Genoa Mathematics Department and Communication, Computer and System Sciences Department supplied assistance and technical help. The staff of the Consorzio Genova Ricerche, particularly Ms. Piera Ponta and Ms. Camilla Marconi, worked diligently over many months and especially during the conference itself to insure a smooth and enjoyable meeting.

Until now, students and researchers in nonparametric and semiparametric statistics and econometrics have had to turn to the latest journal articles to keep pace with these emerging methods of economic analysis. Nonparametric Econometrics fills a major gap by gathering together the most up-to-date theory and techniques and presenting them in a remarkably straightforward and accessible format. The empirical tests, data, and exercises included in this textbook help make it the ideal introduction for graduate students and an indispensable resource for researchers. Nonparametric and semiparametric methods have attracted a great deal of attention from statisticians in recent decades. While the majority of existing books on the subject operate from the presumption that the underlying data is strictly continuous in nature, more often than not a small scientists deal with categorical data—nominal and ordinal—in applied settings. The conventional nonparametric approach to dealing with the presence of discrete variables is acknowledged to be unsatisfactory. This book is tailored to the needs of applied econometricians and social scientists. Qi Li and Jeffrey Racine emphasize nonparametric techniques suited to the rich array of data types—continuous, nominal, and ordinal—within one coherent framework. They also emphasize the properties of nonparametric estimators in the presence of potentially irrelevant variables. Nonparametric Econometrics covers all the material necessary to understand and apply nonparametric methods for real-world problems.

A Course in Large Sample Theory is presented in four parts. The first treats basic probabilistic notions, the second features the basic statistical tools for expanding the theory, the third contains special topics as applications of the general theory, and the fourth covers more standard statistical topics. Nearly all topics are covered in their multivariate setting. The book is intended as a first year graduate course in large sample theory for statisticians. It has been used by graduate students in statistics, biostatistics, mathematics, and related fields. Throughout the book there are many examples and exercises with solutions. It is an ideal text for self study.

This text prepares first-year graduate students and advanced undergraduates for empirical research in economics, and also equips them for specialization in econometric theory, business, and sociology. A Course in Econometrics is likely to be the text most thoroughly attuned to the needs of your students. Derived from the course taught by Arthur S. Goldberg at the University of Wisconsin-Madison and at Stanford University, it is specifically designed for use over two semesters, offers students the most thorough grounding in introductory statistical inference, and offers a substantial amount of interpretive material. The text brims with insights, strikes a balance between rigor and intuition, and provokes students to form their own critical opinions. A Course in Econometrics thoroughly covers the fundamentals—classical regression and simultaneous equations—and offers clear and logical explorations of asymptotic theory and nonlinear regression. To accommodate students with various levels of preparation, the text opens with a thorough review of statistical concepts and methods, then proceeds to the regression model and its variants. Bold subheadings introduce and highlight key concepts throughout each chapter. Each chapter concludes with a set of exercises specifically designed to reinforce and extend the material covered. Many of the exercises include real micro-data analyses, and all are ideally suited to use as homework and test questions.

Nonparametric Econometrics

Econometric Theory

Asymptotic Theory of Statistics and Probability

Asymptotic Theory

Proceedings of the Università di Genova-The Ohio State University Joint Conference, July 9-11, 1990

Unlike uncertain dynamical systems in physical sciences where models for prediction are somewhat given to us by physical laws, uncertain dynamical systems in economics need statistical models. In this context, modeling and optimization surface as basic ingredients for fruitful applications. This volume concentrates on the current methodology of copulas and maximum entropy optimization. This volume contains main research presentations at the Sixth International Conference of the Thailand Econometrics Society held at the Faculty of Economics, Chiang Mai University, Thailand, during January 10-11, 2013. It consists of keynote addresses, theoretical and applied contributions. These contributions to Econometrics are somewhat centered around the theme of Copulas and Maximum Entropy Econometrics. The method of copulas is applied to a variety of economic problems where multivariate model building and correlation analysis are needed. As for the art of choosing copulas in practical problems, the principle of maximum entropy surfaces as a potential way to do so. The state-of-the-art of Maximum Entropy Econometrics is presented in the first keynote address, while the second keynote address focusses on testing stationarity in economic time series data.

This book surveys recent developments in the rapidly expanding field of asymptotic distribution theory, placing special emphasis on the problems of time-dependence and heterogeneity. It is technically self-contained, with all but the most basic mathematical prerequisites being explained in their context.

This book examines the consequences of misspecifications for the interpretation of likelihood-based methods of statistical estimation and inference. The analysis concludes with an examination of methods by which the possibility of misspecification can be empirically investigated.

Until now, few systematic studies of optimal statistical inference for stochastic processes had existed in the financial engineering literature, even though this idea is fundamental to the field. Balancing statistical theory with data analysis, Optimal Statistical Inference in Financial Engineering examines how stochastic models can effectively describe actual financial data and illustrates how to properly estimate the proposed models. After explaining the elements of probability and statistical inference for independent observations, the book discusses the testing hypothesis and discriminant analysis for independent observations. It then explores stochastic processes, many famous time series models, their asymptotically optimal inference, and the problem of prediction, followed by a chapter on statistical financial engineering that addresses option pricing theory, the statistical estimation for portfolio coefficients, and value-at-risk (VaR) problems via residual empirical return processes. The final chapters present some models for interest rates and discount bonds, discuss their no-arbitrage pricing theory, and the problem of credit rating, and illustrate the clustering of stock returns in both the New York and Tokyo Stock Exchanges. Basing results on a modern, unified optimal inference approach for various time series models, this reference underlines the importance of stochastic models in the area of financial engineering.

Probability and Statistics for Economists

Econometric Analysis of Cross Section and Panel Data, second edition

New Directions in Spatial Econometrics

Regional Disparities in Small Countries

Probability and Statistics have been widely used in various fields of science, including economics. Like advanced calculus and linear algebra, probability and statistics are indispensable mathematical tools in economics. Statistical inference in economics, namely econometric analysis, plays a crucial methodological role in modern economics, particularly in empirical studies in economics. This textbook covers probability theory and statistical theory in a coherent framework that will be useful in graduate studies in economics, statistics and related fields. As a most important feature, this textbook emphasizes intuition, explanations and applications of probability and statistics from an economic perspective. Request Inspection Copy

This volume honors George Judge and his many, varied and outstanding contributions to econometrics, statistics, mathematical programming and spatial equilibrium modeling. The papers are grouped into four parts, each part representing an area in which Professor Judge has made a significant contribution. The authors have all benefited in some way, directly or indirectly, through an association with George Judge and his work. The three papers in Part I are concerned with various aspects of pre-test and Stein-rule estimation. Part II contains applications of Bayesian methodology, new developments in Bayesian methodology, and an overview of Bayesian econometrics. The papers in Part III comprise new developments in time-series analysis, improved estimation and Markov chain analysis. The final part on spatial equilibrium modeling contains papers that had their origins from Professor Judge's pioneering work in the 60's.

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

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 Uncertainty Analysis in Econometrics with Applications

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.

Theory and Practice

Mathematical Statistics for Applied Econometrics

New Trends in Systems Theory

An Introduction to Mathematical Analysis for Economic Theory and Econometrics

This Lecture Note contains the most comprehensive treatment to date of microeconomics, 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 microeconomics course, typically a second-year economics PhD course; for data-oriented applied microeconomics 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.

Economic Modeling and Inference
Optimal Statistical Inference in Financial Engineering
A Quiet Revolution in Econometrics
Asymptotic Theory of Weakly Dependent Random Processes
Bootstrapping Stationary ARMA-GARCH Models
Asymptotic Theory for Econometricians**Academic Press Incorporated**
In addition to econometric essentials, this book covers important new extensions as well as how to get standard errors right. The authors explain why fancier econometric techniques are typically unnecessary and even dangerous.

New Perspectives in Econometric Theory comprises specially selected papers by Halbert White which reflect his research in a variety of related areas in econometrics: heteroskedasticity of unknown form; nonlinear and nonparametric regression; instrumental variables and generalized method of moments estimation; and measurability and limit theory. In many instances, results from one paper provide the foundation for, or suggest new directions for, research taken up by others in the collection. The intent of collecting these papers together in the present volume, with new commentaries by the author, is to provide access both to a modern unified perspective for econometric theory and to a set of concepts and tools that will be useful to practitioners in the field. As a companion to the first volume entitled Advances in Econometric Theory, this latest selection of Halbert White's work will appeal to academics and researchers in econometrics and economic theory.

In the widely used over-identified econometric model, the two-step Generalized Methods of Moments (GMM) estimator and inference, first suggested by Hansen (1982), require the estimation of optimal weighting matrix at the initial stages. For time series data and clustered dependent data, which is our focus here, the optimal weighting matrix is usually referred to as the long run variance (LRV) of the (scaled) sample moment conditions. To maintain generality and avoid misspecification, nowadays we do not model serial dependence and within-cluster dependence parametrically but use the heteroscedasticity and autocorrelation robust (HAR) variance estimator in standard practice. These estimators are nonparametric in nature with high variation in finite samples, but the conventional increasing smoothing asymptotics, so called small-bandwidth asymptotics, completely ignores the finite sample variation of the estimated GMM weighting matrix. As a consequence, empirical researchers are often in danger of making unreliable inferences and false assessments of the (efficient) two-step GMM methods. Motivated by this issue, my dissertation consists of three papers which explore the efficiency and approximation issues in the two-step GMM methods by developing new, more accurate, and easy-to-use approximations to the GMM weighting matrix.

The first chapter, "Simple and Trustworthy Cluster-Robust GMM Inference" explores new asymptotic theory for two-step GMM estimation and inference in the presence of clustered dependence. Clustering is a common phenomenon for many cross-sectional and panel data sets in applied economics, where individuals in the same cluster will be interdependent while those from different clusters are more likely to be independent. The core of new approximation scheme here is that we treat the number of clusters G fixed as the sample size increases. Under the new fixed-G asymptotics, the centered two-step GMM estimator and two continuously-updating estimators have the same asymptotic mixed normal distribution. Also, the t statistic, J statistic, as well as the trinity of two-step GMM statistics (QLR, LM and Wald) are all asymptotically pivotal, and each can be modified to have an asymptotic standard F distribution or t distribution. We also suggest a finite sample variance correction further to improve the accuracy of the F or t approximation. Our proposed asymptotic F and t tests are very appealing to practitioners, as test statistics are simple modifications of the usual test statistics, and the F or t critical values are readily available from standard statistical tables. We also apply our methods to an empirical study on the causal effect of access to domestic and international markets on household consumption in rural China. The second paper "Should we go one step further? An Accurate Comparison of One-step and Two-step procedures in a Generalized Method of Moments Framework" (coauthored with Yixiao Sun) focuses on GMM procedure in time-series setting and provides an accurate comparison of one-step and two-step GMM procedures in a fixed-smoothing asymptotics framework. The theory developed in this paper shows that the two-step procedure outperforms the one-step method only when the benefit of using the optimal weighting matrix outweighs the cost of estimating it. We also provide clear guidance on how to choose a more efficient (or powerful) GMM estimator (or test) in practice. When our fixed smoothing asymptotic theory accurately describes sampling distribution of two-step GMM test statistic, the limiting distribution of conventional GMM statistics is non-standard, and its critical values need to be simulated or approximated by standard distributions in general. In the last chapter, "Asymptotic and t Tests in an Efficient GMM Setting" (coauthored with Yixiao Sun), we propose a simple and easy-to-implement modification to the trinity (QLR, LM, and Wald) of two-step GMM statistics and show that the modified test statistics are all asymptotically F distributed under the fixed-smoothing asymptotics. The modification is multiplicative and only involves the J statistic for testing over-identifying restrictions. In fact, what we propose can be regarded as the multiplicative variance correction for two-step GMM statistics that takes into account the additional asymptotic variance term under the fixed-smoothing asymptotics. The results in this paper can be immediately generalized to the GMM setting in the presence of clustered dependence.

Mostly Harmless Econometrics

Inference for Functional Data with Applications

Recent Advances and Future Directions in Causality, Prediction, and Specification Analysis

A Course in Large Sample Theory

Game Theory and Economic Analysis

This book serves as a comprehensive source of asymptotic results for econometric models with deterministic exogenous regressors. Such regressors include linear (more generally, piece-wise polynomial) trends, seasonally oscillating functions, and slowly varying functions including logarithmic trends, as well as some specifications of spatial matrices in the theory of spatial models. The book begins with central Limit theorems (CLTs) for weighted sums of short memory linear processes. This part contains the analysis of certain operators in Lp spaces and their employment in the derivation of CLTs. The applications of CLTs are to the asymptotic distribution of various estimators for several econometric models. Among the models discussed are static linear models with slowly varying regressors, spatial models, time series autoregressions, and two nonlinear models (binary logit model and nonlinear model whose linearization contains slowly varying regressors). The estimation procedures include ordinary and nonlinear least squares, maximum likelihood, and method of moments. Additional topical coverage includes an introduction to operators, probabilities, and linear models; Lp-approximable sequences of vectors; convergence of linear and quadratic forms; regressions with slowly varying regressors; spatial models; convergence; nonlinear models; and tools for vector autoregressions.

This book is intended to provide a somewhat more comprehensive and unified treatment of large sample theory than has been available previously and to relate the fundamental tools of asymptotic theory directly to many of the estimators of interest to econometricians. In addition, because economic data are generated in a variety of different contexts (time series, cross sections, time series-cross sections), we pay particular attention to the similarities and differences in the techniques appropriate to each of these contexts.

Stochastic Limit Theory has become a standard reference in its field. This new edition offers updated and improved results and an extended range of topics. It works both as a textbook and as an account of recent work in a field of particular interest to econometricians.

Asymptotic Statistics

Handbook of Quantile Regression

Elements of Modern Asymptotic Theory with Statistical Applications