DOWNLOAD PDF STOCHASTIC LIMIT THEORY

Chapter 1 : CiteSeerX â€” Citation Query Stochastic Limit Theory

This major new econometrics text surveys recent developments in the rapidly expanding field of asymptotic distribution theory, with a special emphasis on the problems of time dependence and heterogeneity.

Empirical properties of asset returns: We present a set of stylized empirical facts emerging from the statistical analysis of price variations in various types of financial markets. We first discuss some general issues common to all statistical studies of financial time series. Various statistical properties of asset returns are then des Various statistical properties of asset returns are then described: Our description emphasizes properties common to a wide variety of markets and instruments. We then show how these statistical properties invalidate many of the common statistical approaches used to study financial data sets and examine some of the statistical problems encountered in each case. Show Context Citation Context In order to obtain confidence intervals for finite samples, one often requires the residuals to be IID and some of their higher-order typically fourth order moments to be well defined finite. Spatial econometric methods deal with the incorporation of spatial interaction and spatial structure into regression analysis. The field has seen a recent and rapid growth spurred both by theoretical concerns as well as by the need to be able to apply econometric models to emerging large geocoded da The field has seen a recent and rapid growth spurred both by theoretical concerns as well as by the need to be able to apply econometric models to emerging large geocoded data bases. The review presented in this chapter outlines the basic terminology and discusses in some detail the specification of spatial effects, estimation of spatial regression models, and specification tests for spatial effects. Asymptotic distributions of quasi-maximum likelihood estimates for spatial autoregressive models. Econometrica by Lung-fei Lee, Joel Horowitz , " This paper investigates asymptotic properties of the maximim likelihood estimator and the quasi-maximum likelihood estimator for the spatial autoregressive model. The rates of convergence of those estimators may depend on some general features of the spatial weights matrix of the model. It is important to make the distinction with different spatial scenarios. When each unit can be influenced by many neighbors, irregularity of the information matrix may occur and various components of the estimators may have different rates of convergence. On adaptive markov chain monte carlo algorithm by Yves F. We look at adaptive MCMC algorithms that generate stochastic processes based on sequences of transition kernels, where each transition kernel is allowed to depend on the past of the process. We show under certain conditions that the generated stochastic process is ergodic, with appropriate stationar We show under certain conditions that the generated stochastic process is ergodic, with appropriate stationary distribution. Our algorithm thus automatically determines and runs the optimal RWM scaling, with no manual tuning required. We close with a simulation example. On the asymptotic distribution of the Moran I test statistic with applications by Harry H. Prucha - Journal of Econometrics " Despite this, the available results in the literature concerning the large sample distribution of this statistic are limited and have been derived under assumptions that do not cover many appli Despite this, the available results in the literature concerning the large sample distribution of this statistic are limited and have been derived under assumptions that do not cover many applications of interest. In this paper we first give a general result concerning the large sample distribution of Moran I type test statistics. We then apply this result to derive the large sample distribution of the Moran I test statistic for a variety of important models. In order to establish these results we also give a new central limit theorem for linear-quadratic forms.

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Chapter 2 : Stochastic Limit Theory: An Introduction for Econometricians - Oxford Scholarship

This book aims to introduce modern asymptotic theory to students and practitioners of econometrics. It falls broadly into two parts. The first half provides a handbook and reference for the underlying mathematics (Part I, Chapters 1â€•6), statistical theory (Part II, Chapters 7â€•11) and stochastic process theory (Part III, Chapters 12â€•17).

Davidson Abstract 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: 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. Suggested Citation Davidson, James, To find whether it is available, there are three options: Check below whether another version of this item is available online. Perform a search for a similarly titled item that would be available. More about this item Access and download statistics Corrections All material on this site has been provided by the respective publishers and authors. You can help correct errors and omissions. See general information about how to correct material in RePEc. For technical questions regarding this item, or to correct its authors, title, abstract, bibliographic or download information, contact: General contact details of provider: If you have authored this item and are not yet registered with RePEc, we encourage you to do it here. This allows to link your profile to this item. It also allows you to accept potential citations to this item that we are uncertain about. We have no references for this item. You can help adding them by using this form. If you know of missing items citing this one, you can help us creating those links by adding the relevant references in the same way as above, for each refering item. If you are a registered author of this item, you may also want to check the "citations" tab in your RePEc Author Service profile, as there may be some citations waiting for confirmation. Please note that corrections may take a couple of weeks to filter through the various RePEc services. More services and features.

Chapter 3 : Stochastic - Wikipedia

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.

In this paper we investigate the properties of the standard two-pass methodology of testing beta pricing models with misspecified factors. In a setting where a factor is useless, defined as being independent of all the asse t returns, we provide theoretical results and simulation evidence that the s In a setting where a factor is useless, defined as being independent of all the asse t returns, we provide theoretical results and simulation evidence that the second-pass cross-sectional regression tends to find the beta risk of the useless factor priced more often than it should. More surprisingly, this misspecification bias exacerbates when the number of time series observations increases. Possible ways of detecting useless factors are also examined. When testing asset pricing models relating risk premiums on assets to their betas, the primary question of interest is whether the beta risk of a particular factor is priced i. Black, Jensen, and Scholes and Fama and MacBeth develop a two-pass methodology in which the beta of each asset with respect to a factor is estimated in a first-pass time series regression, and estimated betas are then used in second-pass cross-sectional regressions CSRs to estimate the risk premium of the factor. This two-pass methodology is very intuitive and has been widely used in the literature. The properties of the test statistics and goodness-of-fit measures under the two-pass methodology are usually developed under the assumptions that the asset pricing model is correctly specified and that the factors are correctly identified. Shanken provides an excellent discussion of this two-pass methodology, especially the large sample properties of the two-pass CSR for the correctly specified model under the assumption that returns are conditionally homoskedastic. It is common to conduct bootstrap inference in vector autoregressive VAR models based on the assumption that the underlying data-generating process is of finite-lag order. This assumption is implausible in practice. We establish the asymptotic validity of the residual-based bootstrap method for sm We establish the asymptotic validity of the residual-based bootstrap method for smooth functions of VAR slope parameters and innovation variances under the alternative assumption that a sequence of finite-lag order VAR models is fitted to data generated by a VAR process of possibly infinite order. This class of statistics includes measures of predictability and orthogonalized impulse responses and variance decompositions. Our approach provides an alternative to the use of the asymptotic normal approximation and can be used even in the absence of closed-form solutions for the variance of the estimator. We illustrate the practical relevance of our findings for applied work, including the evaluation of macroeconomic models. The implausibility of finite-lag order VAR models has been pointed out by Braun and Mittnik , among others, but the finite-lag order assumption continues to play a central role in econometric inference in practice. We propose a new Information Criterion for Impulse Response Function Matching estimators of the structural parameters of macroeconomic models. The main advantage of our procedure is that it allows the researcher to select the impulse responses that are most informative about the deep param We show that our method substantially changes key parameter estimates of representative Dynamic Stochastic General Equilibrium models, thus reconciling their empirical results with the existing literature. Our criterion is general enough to apply to impulse responses estimated by VARs, local projections, as well as simulation methods. C32, E47, C52, C We thank Craig Burnside for sharing his codes and for many useful suggestions along the way. We also thank L. Christiano for making the Altig et al. This paper studies generalized method of moments tests for the stochastic discount factor representation of asset pricing models when one of the proposed factors is in fact useless, defined as being independent of the asset returns. Analytic results on asymptotic distributions and simulation results Analytic results on asymptotic distributions and simulation results on finite sample distributions both show that i the Wald test tends to overreject the hypothesis of a zero factor premium for a useless factor when the model is misspecified, ii with the presence of a useless factor, the power of the over-identifying restriction test in rejecting misspecified models is reduced, and in some cases a misspecified model with a useless factor is more likely to be accepted than the

true model. Arguably the most aggressive affirmative action program ever implemented in the United States was a series of court-ordered racial hiring quotas imposed on municipal police departments. My best estimate of the effect of court-ordered affirmative action on work-force composition is a percentage-po My best estimate of the effect of court-ordered affirmative action on work-force composition is a percentage-point gain in the fraction African American among newly hired officers. Evidence on police performance is mixed. Despite substantial black-white test score differences on police department entrance examinations, city crime rates appear unaffected by litigation. However, litigation lowers slightly both arrests per crime and the fraction black among serious arrestees. JEL H76, J15, J78, K31 Arguably the most aggressive affirmative action program ever implemented in the United States was a series of court-ordered racial hiring quotas imposed on municipal police departments. These quotas arose out of a wave of class action employment discrimination lawsuits filed in the federal district courts beginning in Court-ordered affirmative action in this sector has been both aggressive and persistent: Boston and Cambridge, Massachusetts, remain to this day subject to hiring quotas first imposed in Show Context Citation Context For example, the difference between Model 2 in column 2 usual weights and Model 2 in column 14 reweighting the unl Generating scheme for long memory process: This paper analyses a class of nonlinear time series models exhibiting long memory. These processes exhibit short memory fluctuations around a local mean regime which switches randomly such that the durations of the regimes follow a power law. We show that if a large number of independent copies o We show that if a large number of independent copies of such a process are aggregated, the resulting processes are Gaussian, have a linear representation, and converge after normalisation to fractional Brownian motion. Two cases arise, a stationary case in which the partial sums of the process converge, and a nonstationary case in which the process itself converges, the Hurst coefficient falling in the ranges 12, 1 and 0, 1 2 respectively. However, a non-aggregated regime process is shown to converge to a Levy motion with infinite variance, suitably normalised, emphasising the fact that time aggregation alone fails to yield a FCLT. We comment on the relevance of our results to the interpretation of the long memory phenomenon, and also report some simulations aimed to throw light on the problem of discriminating between the models in practice.

Chapter 4 : Stochastic Limit Theory - Davidson, James - | HPB

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Chapter 5 : Stochastic Limit Theory: An Introduction for Econometricians

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.

Creativity[edit] Simonton , Psych Bulletin argues that creativity in science of scientists is a constrained stochastic behaviour such that new theories in all sciences are, at least in part, the product of a stochastic process. Stochastic ray tracing is the application of Monte Carlo simulation to the computer graphics ray tracing algorithm. It is essentially an application of the Monte Carlo method to 3D computer graphics , and for this reason is also called Stochastic ray tracing. Music[edit] In music , mathematical processes based on probability can generate stochastic elements. Stochastic processes may be used in music to compose a fixed piece or may be produced in performance. Stochastic music was pioneered by Iannis Xenakis , who coined the term stochastic music. Subtractive color reproduction[edit] When color reproductions are made, the image is separated into its component colors by taking multiple photographs filtered for each color. One resultant film or plate represents each of the cyan, magenta, yellow, and black data. Color printing is a binary system, where ink is either present or not present, so all color separations to be printed must be translated into dots at some stage of the work-flow. A stochastic or frequency modulated dot pattern creates a sharper image. Language and linguistics[edit] Non-deterministic approaches in language studies are largely inspired by the work of Ferdinand de Saussure , for example, in functionalist linguistic theory , which argues that competence is based on performance. To the extent that linguistic knowledge is constituted by experience with language, grammar is argued to be probabilistic and variable rather than fixed and absolute. Though this conception has been contested, [39] it has also provided the foundation for modern statistical natural language processing [40] and for theories of language learning and change. The event creates its own conditions of possibility, rendering it unpredictable if simply for the number of variables involved. This assumption is largely valid for either continuous or batch manufacturing processes. Testing and monitoring of the process is recorded using a process control chart which plots a given process control parameter over time. Typically a dozen or many more parameters will be tracked simultaneously. Statistical models are used to define limit lines which define when corrective actions must be taken to bring the process back to its intended operational window. This same approach is used in the service industry where parameters are replaced by processes related to service level agreements. Finance[edit] The financial markets use stochastic models to represent the seemingly random behaviour of assets such as stocks , commodities , relative currency prices i. These models are then used by quantitative analysts to value options on stock prices, bond prices, and on interest rates, see Markov models. Moreover, it is at the heart of the insurance industry. Media[edit] The marketing and the changing movement of audience tastes and preferences, as well as the solicitation of and the scientific appeal of certain film and television debuts i. A recent attempt at repeat business analysis was done by Japanese scholars[citation needed] and is part of the Cinematic Contagion Systems patented by Geneva Media Holdings, and such modeling has been used in data collection from the time of the original Nielsen ratings to modern studio and television test audiences.

Chapter 6 : Stochastic process - Wikipedia

Stochastic Limit Theory has 1 rating and 0 reviews. This major new econometrics text surveys recent developments in the rapidly expanding field of asympt.

Chapter 7 : CiteSeerX â€" Citation Query Stochastic limit theory: An introduction for econometricians

The word stochastic is an adjective in English that describes something that was randomly determined. The word first appeared in English to describe a mathematical object called a stochastic process, but now in mathematics the terms

stochastic process and random process are considered interchangeable.

Chapter 8 : Stochastic Limit Theory: An Introduction for Econometricicans by Arnold I. Davidson

The Internet has provided us with an opportunity to share all kinds of information, including music, movies, and, of course, books. Regretfully, it can be quite daunting to find the book that you are looking.

Chapter 9 : Stochastic Limit Theory : James Davidson :

Stochastic Limit Theory: An Introduction for Econometricians This major new econometrics text surveys recent developments in the rapidly expanding field of asymptotic distribution theory, with a special emphasis on the problems of time dependence and heterogeneity.