

ADAM MCCLOSKEY

Department of Economics

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ACADEMIC POSITIONS

Visiting Assistant Professor of Economics, Brown University, July 2011-present

EDUCATION

Ph.D., Economics, Boston University, Boston MA, May 2011

M.A., Political Economy, Boston University, Boston, MA, 2011

B.A. (*with distinction*), Mathematics and Economics (*summa cum laude*), University of Colorado, Boulder, CO, 2006

FIELDS OF INTEREST

Econometrics, Time Series Analysis, Mathematical Finance

TEACHING EXPERIENCE

Instructor, Econometrics II (Undergraduate), Brown University, Fall 2011

Instructor, Investments I (Undergraduate), Brown University, Fall 2011

Teaching Fellow, Advanced Econometrics I (Ph.D. Level), Boston University, Spring 2010, Spring 2011 (Students' Rating 4.7/5.0)

Teaching Fellow, Advanced Statistics for Economists (Ph.D. Level), Boston University, Fall 2007

ACADEMIC WORK EXPERIENCE

Research Assistant to Professor Pierre Perron, Boston University, Spring 2008, Fall 2008

REFEREE EXPERIENCE

Computational Statistics and Data Analysis, Econometric Reviews, Review of Economics and Statistics

FELLOWSHIPS, HONORS AND AWARDS

Special Research Fellowship, Boston University, Spring 2009, Fall 2009, Fall 2010

Summer Research Grant, Boston University, 2008, 2009, 2010

Dean's Fellowship, Boston University, 2006-2011

Teaching Fellowship, Boston University, Fall 2007, Spring 2010, Spring 2011

Jacob Van Ek Award (Highest Academic Award Granted by College of Arts and Sciences), University of Colorado, May 2005

Phi Beta Kappa, 2004

Dean's List, University of Colorado, 2002-2006

REVISE AND RESUBMIT

- “Consistent Estimation of the Long-Memory Stochastic Volatility Model Parameters that is Robust to Level Shifts and Deterministic Trends”, December 2010, revision requested by *Journal of Time Series Analysis*.
- “Memory Parameter Estimation in the Presence of Level Shifts and Deterministic Trends” (with Pierre Perron), February 2010, revision requested by *Econometric Theory*.

WORKING PAPERS

- “Powerful Procedures with Correct Size for Test Statistics with Limit Distributions that are Discontinuous in Some Parameters” (Job Market Paper), October 2011.
- “Parameter Estimation Robust to Low-Frequency Contamination with Applications to ARMA, GARCH and Stochastic Volatility Models”, November 2010.
- “Semiparametric Testing for Changes in Memory of Otherwise Stationary Time Series”, March 2009.

WORK IN PROGRESS

- “Hypothesis Testing After Model Selection: Towards a General Asymptotic Framework”
- “Testing for Level Shifts and Deterministic Trends in the Potential Presence of Long-Memory” (with Mohitosh Kejriwal)
- “Dynamically Consistent Mean-Variance Analysis” (with Marcel Rindisbacher)

INVITED SEMINAR AND CONFERENCE PRESENTATIONS

- Boston College Econometrics Workshop, September 2011
- North American Summer Meeting of the Econometric Society, Washington University in St. Louis, June 2011
- Conference in Honor of Halbert White, University of California, San Diego, May 2011
- University of Colorado at Boulder Econometrics Workshop, March 2011
- Granger Centre for Time Series Econometrics Seminar, University of Nottingham, June 2010
- NBER-NSF Time Series Conference, University of California, Davis, September 2009
- Far East and South Asia Meeting of the Econometric Society, University of Tokyo, August 2009

COMPUTER SKILLS: Matlab, GAUSS, Stata, Mathematica, LaTeX, Microsoft Office

CITIZENSHIP: U.S.A.

REFERENCES

Professor Pierre Perron
Department of Economics
Boston University
Phone: (617) 353-3026
Email: perron@bu.edu

Professor Zhongjun Qu
Department of Economics
Boston University
Phone: (617) 353-3184
Email: qu@bu.edu

Professor Hiroaki Kaido
Department of Economics
Boston University
Phone: (617) 358-5924
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Professor Iván Fernández-Val
Department of Economics
Boston University
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October 2011

Powerful Procedures with Correct Size for Test Statistics with Limit Distributions that are Discontinuous in Some Parameters (Job Market Paper)

We develop powerful new size-correction procedures for hypothesis testing environments in which the asymptotic distribution of a test statistic is discontinuous in some parameters under the null hypothesis. Examples of this form of nonstandard testing problems are rather pervasive in econometrics and complicate inference by making size difficult to control. This paper introduces two new size-correction methods that correspond to two different general hypothesis testing frameworks. They are designed to maximize the power of the underlying test while maintaining correct asymptotic size. The first new method provides a complementary alternative to existing size-correction methods that apply to the first testing framework, entailing higher power for certain subclasses of testing problems. The second new method is the first available to have correct asymptotic size for testing problems that fall under the second framework. Problems that fall under this framework include hypothesis tests on regression parameters after consistent model selection and tests on a classic class of shrinkage/super-efficient estimators. We detail the construction and performance of the new tests in three specific examples: testing after conservative model selection, testing when a nuisance parameter may be on a boundary and testing after consistent model selection.

Parameter Estimation Robust to Low-Frequency Contamination with Applications to ARMA, GARCH and Stochastic Volatility Models

I provide methods to robustly estimate the parameters of strictly stationary short-memory time series models in the potential presence of additive low-frequency contamination. The types of contamination covered include level shifts (changes in mean) and monotone or smooth time trends, both of which have been shown to bias parameter estimates towards regions of persistence in a variety of contexts. The estimators presented here minimize trimmed frequency domain quasi-maximum likelihood (FDQML) and Whittle objective functions without requiring specification of the low-frequency contaminating component. When proper sample size-dependent trimmings are used, the FDQML estimators are consistent and asymptotically normal, asymptotically eliminating the presence of any spurious persistence. These asymptotic results also hold in the absence of additive low-frequency contamination, enabling the practitioner to robustly estimate model parameters without prior knowledge of whether contamination is present. I explore the finite sample properties of the trimmed FDQML estimator of the parameters of some of popular time series models, providing practical guidance on trimming choice. In the presence of contamination, the estimators I advocate entail substantial gains over standard estimators. Empirical estimation results suggest that a large portion of the apparent persistence in certain economic and financial time series may indeed be spurious.

Memory Parameter Estimation in the Presence of Level Shifts and Deterministic Trends (with Pierre Perron)

We propose estimators of the memory parameter of a time series that are robust to a wide variety of random level shift processes, deterministic level shifts and deterministic time trends. The estimators are simple trimmed versions of the popular log-periodogram regression estimator that employ certain sample size-dependent, and in some cases, data-dependent trimmings which discard low-frequency components. Regardless of whether the underlying long/short-memory process is contaminated by level shifts or deterministic trends, our estimators are shown to be consistent and asymptotically normal with the same limiting variance as the standard log-periodogram estimator. An extensive simulation study shows that our estimators perform their intended purpose quite well, substantially decreasing both finite sample bias and root mean-squared error in the presence of these contaminating components. To balance the potential finite sample biases involved in estimating the memory parameter, we recommend a particular version of our estimators that performs well in a wide variety of circumstances. Finally, we apply our estimators to stock market volatility and hydrological data.