

Jonathan B. Hill

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Assistant Professor of Economics
Department of Economics
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EDUCATION AND RESEARCH

RESEARCH FIELDS

Econometric Theory, Mathematical Statistics, Time Series Econometrics, Financial Econometrics

RESEARCH INTERESTS

- *Extreme value theory* (tail shape, tail fractile, tail dependence, extremal causality) with applications in finance (equity markets) macroeconomics (exchange rates) and microeconomics (auctions).
- *Non-parametric statistics* (tests of functional form, tail dependence and tail-trimming).
- *Robust estimation* (tail-trimmed GMM, QML, LAD; analysis of dependent, heterogeneous extremes)
- *Asymptotic theory* (weak limit theory for D-valued arrays; weak limit theory for nonlinear tail arrays; central limit theory for non-iid tail-trimmed sums)

CURRENT ACADEMIC APPOINTMENTS

Assistant Professor of Economics, University of North Carolina-Chapel Hill, 2008-

RESEARCH VISITS

Visiting Research Fellow, CentER, University of Tilburg (Fall 2009)

Visiting Fellow, CIREQ and Concordia University (March 1-7, 2010)

PREVIOUS ACADEMIC APPOINTMENTS

Visiting Assistant Professor of Economics, University of North Carolina-Chapel Hill (2007-08)

Assistant Professor of Economics, Florida International University (2004-2007)

Visiting Professor of Statistics, China Agricultural University, Beijing (Summers 2001 and 2002)

Visiting Lecturer of Econometrics, University of California-San Diego (2001-2003)

DEGREES

Ph.D.: Economics, 2001, University of Colorado-Boulder

B.A.'s: Economics, Sociology and Anthropology, 1990, University of Colorado-Boulder

PUBLISHED AND FORTHCOMING PAPERS

1. On Tail Index Estimation for Dependent, Heterogeneous Data (2010) *Econometric Theory* 26, in press.
2. On Functional Central Limit Theorems for Dependent, Heterogeneous Arrays with Applications to Tail Index and Tail Dependence Estimation (2009) *Journal of Statistical Planning and Inference* 139, 2091-2110.
3. Heavy Tails and Mixed Distribution Hypothesis (2008) *Encyclopedia of Quantitative Finance*, Wiley: forthcoming.
4. Consistent and Non-Degenerate Model Specification Tests Against Smooth Transition and Neural Network Alternatives (2008) *Annales D'Economie et de Statistique*: in press.
5. Efficient Tests of Long-Run Causation in Trivariate VAR Processes with a Rolling Window Study of the Money-Income Relationship (2007) *Journal of Applied Econometrics* 22, 747-765.
6. Strong Orthogonal Decompositions and Nonlinear Impulse Response Functions for Infinite Variance Processes (2006) *Canadian Journal of Statistics* 34, 453-473.
7. Royal African Company Share Prices during the South Sea Bubble (2002, with Ann Carlos and Nathalie Moyen), *Explorations in Economic History* 39.

PAPERS UNDER REVIEW OR REVISION FOR PUBLICATION

8. Tail and Non-Tail Memory with Applications to Extreme Value and Robust Statistics (2008) Revised and resubmitted to *Econometric Theory*
9. Consistent GMM Residuals-Based Tests of Functional Form (2008) Revised and resubmitted to *Econometric Reviews*
10. Limit Theory for Kernel-Self Normalized Tail-Trimmed Sums of Dependent, Heterogeneous Data with Applications (2009)
11. Extremal Memory of Stochastic Volatility with Applications to Tail Shape and Tail Dependence Inference (2008)
12. Gaussian Tests of 'Extremal White Noise' for Dependent, Heterogeneous, Heavy Tailed Time Series with an Application (2008)
13. Robust Estimation and Inference for Extremal Dependence in Time Series (2009)
14. Are There Common Values on BC Timber Sales? A Tail-Index Nonparametric Test (2009, with A. Shneyerov)
15. Stochastically Weighted Average Conditional Moment Tests of Functional Form (2008)

PAPERS IN PROGRESS

16. Generalized Method of Tail Trimmed Moments (with Eric Renault)
17. Minimum Distance Estimation under Non-Standard Conditions with Applications to Robust QML
18. Tail Dependence for Time Series : Model-Free Characterizations and a Consistent Wald Test
19. Trimmed Least Square for Dynamic Linear Regressions Models with Heterogeneous Errors
20. Adaptive Tail Trimmed QML Estimation for Nonlinear Semi-Strong GARCH Models

CONFERENCES AND WORKSHOPS

Computing in Economics and Finance Conference, Boston., June 1999.

Econometric Society European Summer Meeting, Madrid, Sept. 1999, (*discussant*)

Econometric Society North American Summer Meeting, Seattle, Aug. 2000
 Society for Nonlinear Dynamics in Econometrics 12th Annual Symposium, Atlanta, March 2004
 Econometric Society North American Winter Meeting, Providence, June 2004 (*chair*)
 Econometric Society European Summer Meeting, Madrid,, Aug. 2004
 Midwestern Econometrics Group, Chicago , Oct. 2004
 European Meeting of Statisticians, Oslo, July 2005
 Econometric Society World Congress, London , Aug. 2005
 Vilnius Conference on Mathematical Statistics, June 2006
 European Meeting of Statisticians, Turon, July 2006 (accepted)
 Statistical and Applied Mathematical Sciences Institute: Extreme Events, Sept. 2007
 Triangle Econometrics Conference, Durham NC, Dec. 2007.
 Computational and Financial Econometrics – Neuchâtel, Switzerland, June 2008 (*invited speaker, chair*)
 Econometric Society North American Summer Meeting, Pittsburgh, June 2008
 Joint Statistical Meetings – Denver, Aug. 2008
 Royal Statistical Society – Nottingham, Sept. 2008
 UNC-NCSU Econometrics Workshop, Oct. 2008

SEMINARS, COLLOQUIA, AND INVITED TALKS

Colorado State University, Dept. of Statistics; Indiana University, Dept. of Economics; University of California – San Diego, Dept. of Economics; Vrije Universiteit Amsterdam, Dept. of Econometrics; University of Amsterdam, Dept. of Econometrics; University of Mannheim, Dept. of Statistics; Lancaster University, Dept. of Mathematics and Statistics; Maastricht University, Dept. of Quantitative Economics; University of North Carolina-Chapel Hill, Dept. of Statistics and O.R.; University of Toronto, Dept. of Economics; Duke University, Dept. of Economics; London School of Economics, Dept. of Economics; Oxford University, Dept. of Economics; University of North Carolina – Chapel Hill, Dept. of Economics; University of Toronto, Dept. of Statistics' University of California – Davis, Dept. of Statistics; Georgia Institute of Technology - Dept. of Mathematics; Center Econometrics and Statistics Seminar at University of Tilburg

PROFESSIONAL ACTIVITIES

JOURNAL, ACADEMIC PRESS and RESEARCH GRANT PROPOSAL REFEREE

Econometrica, Journal of the American Statistical Association, Econometric Theory, Annals of Statistical Mathematics, Journal of Nonparametric Statistics, Journal of Multivariate Analysis, Journal of Business and Economic Statistics, Journal of Econometrics, Stochastic Processes and their Applications, Journal of Time Series Analysis, Oxford Bulletin of Economics and Statistics, Statistical Methods and Applications, IMA Journal of Management Mathematics, Studies in Nonlinear Dynamics and Econometrics, Journal of the Korean Statistical Society, Economic Modeling, Computational Statistics and Data Analysis, Physica A: Statistical Mechanics, Physica D: Nonlinear Phenomena, Econometrics Journal, International Economics and Finance Journal, National Science Foundation, Yale University Press

AFFILIATIONS

Institute of Mathematical Statistics, Econometric Society, American Economic Association

TEACHING

UNDERGRADUATE: Econometrics, Time Series Forecasting, Public Finance, Mathematical Economics, Microeconomics: principles, intermediate, Macroeconomics: principles, intermediate

GRADUATE: Nonlinear Time Series, Time Series, Econometric Research Methods, Mathematical Statistics, Microeconometrics, Applied Time Series Forecasting, Public Finance

THESIS COMMITTEES:

Evgeniya Bakunova (2009: Honors, UNC-CH, *Intertemporal Decision Making in Economic Agents*) - advisor
Michael Aguilar (2008: Ph.D., UNC-CH, *Essays in Financial Econometrics: GMM and Cond. Heterosced.*)
Jeffrey Czaikowski (2007: Ph.D., FIU)