

BRUCE E. HANSEN
Trygve Haavelmo Professor of Economics
Phipps Distinguished Chair in Economics

May 2018

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University of Wisconsin
Madison, WI 53706-1393

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Born: April 18, 1962

Personal: U.S. citizen, married, two children

Education

1984 A.B. (Economics/Philosophy) Occidental College, Summa cum Laude

1986 M.A. (Economics) Yale University

1989 Ph.D. (Economics) Yale University

Academic Positions

1989-1992 Assistant Professor, Department of Economics, University of Rochester

1992-1994 Associate Professor, Department of Economics, University of Rochester

1994-1995 Associate Professor, Department of Economics, Boston College

1995-1998 Professor, Department of Economics, Boston College

1998-2008 Professor, Department of Economics, University of Wisconsin

2008- Trygve Haavelmo Professor of Economics, University of Wisconsin

2015- Mary Claire Aschenbrenner Phipps Distinguished Chair in Economics, University of Wisconsin

Grants

1991-1992 National Science Foundation Grant SES-9022176

1992-1993 National Science Foundation Grant SES-9120576

1994-1996 Alfred P. Sloan Foundation Research Fellowship

1994-1997 National Science Foundation Grant SBR-9412339

1998-2001 National Science Foundation Grant SBR-9807111

2003-2006 National Science Foundation Grant SBR-0241152

2006-2009 National Science Foundation Grant SES-0550908

2010-2013 National Science Foundation Grant SES-0961258

2013-2016 National Science Foundation Grant SES-1258858

2017-2020 National Science Foundation Grant SES-1656123

Honors and Awards

Fellow, Econometric Society, 2000

Fellow, Journal of Econometrics, 2000

Fellow, International Association for Applied Econometrics, 2018

Kellett Mid-Career Award, University of Wisconsin, 2005

WARF Professorship, University of Wisconsin, 2008

Leon Epstein Faculty Fellow Award, University of Wisconsin, 2010-2011

Editorial & Professional Positions

| | | |
|-----------|--|--------------------------------------|
| 1995-2008 | Co-Editor | <i>Econometric Theory</i> |
| 1996-2008 | Associate Editor | <i>Econometrica</i> |
| 1992-1995 | Associate Editor | <i>Econometric Theory</i> |
| 2011- | Board of Directors | National Bureau of Economic Research |
| 2015- | Elected Member of North American Standing Committee, | Econometric Society |

Refereed Publications

- [1] "Estimation and inference in models of cointegration: A simulation study," with P.C.B. Phillips, *Advances in Econometrics* (1990), 8, 225-248.
- [2] "Statistical inference in instrumental variables regression with I(1) processes," with P.C.B. Phillips, *Review of Economic Studies* (1990), 57, 99-125.
- [3] "Strong laws for dependent heterogeneous processes," *Econometric Theory* (1991), 7, 213-221, and "Erratum" (1992), 8, 421-422.
- [4] "GARCH(1,1) processes are near-epoch dependent," *Economic Letters* (1991), 36, 181-186.
- [5] "Efficient estimation and testing of cointegrating vectors in the presence of deterministic trends," *Journal of Econometrics* (1992), 53, 87-121.
- [6] "Testing for parameter instability in linear models," *Journal of Policy Modeling* (1992), 14, 517-533.
- [7] "Heteroskedastic cointegration," *Journal of Econometrics* (1992), 54, 139-158.
- [8] "Tests for parameter instability in regressions with I(1) processes," *Journal of Business and Economic Statistics* (1992), 10, 321-335. Reprinted in Twentieth Anniversary Commemorative Issue of *Journal of Business and Economic Statistics* (2002), 20, 45-59.
- [9] "Convergence to stochastic integrals for dependent heterogeneous processes," *Econometric Theory* (1992), 8, 489-500.
- [10] "The likelihood ratio test under non-standard conditions: Testing the Markov switching model of GNP," *Journal of Applied Econometrics* (1992), 7, S61-S82. Also in *Nonlinear Dynamics, Chaos and Econometrics*, ed. M.H. Pesaran and S.M. Potter (1993), John Wiley & Sons. Also "Erratum", *Journal of Applied Econometrics*, (1996), 11, 195-198.
- [11] "Consistent covariance matrix estimation for dependent heterogeneous processes," *Econometrica* (1992), 60, 967-972.
- [12] "Asymptotic theory for the GARCH(1,1) quasi-maximum likelihood estimator," with Sang-Won Lee, *Econometric Theory* (1994), 10, 29-52.

- [13] "Autoregressive conditional density estimation," *International Economic Review* (1994), 35, 705-730.
- [14] "Are seasonal patterns constant over time? A test for seasonal stability," with Fabio Canova, *Journal of Business and Economic Statistics* (1995), 13, 237-252.
- [15] "Rethinking the univariate approach to unit root tests: How to use covariates to increase power," *Econometric Theory* (1995), 11, 1148-1171.
- [16] "Regression with non-stationary volatility," *Econometrica* (1995), 63, 1113-1132.
- [17] "Residual-based tests for cointegration in models with regime shifts," with Allan Gregory, *Journal of Econometrics* (1996), 70, 99-126.
- [18] "Stochastic equicontinuity for unbounded dependent heterogeneous arrays," *Econometric Theory* (1996), 12, 347-359.
- [19] "Tests for cointegration in models with regime and trend shifts," with Allan Gregory, *Oxford Bulletin of Economics and Statistics*, (1996), 58, 555-560.
- [20] "Inference when a nuisance parameter is not identified under the null hypothesis," *Econometrica* (1996), 64, 413-430.
- [21] "Review article. Methodology: Alchemy or Science?" *The Economic Journal*, (1996), 106, 1398-1413.
- [22] "Approximate asymptotic p-values for structural change tests," *Journal of Business and Economic Statistics* (1997), 15, 60-67.
- [23] "On the issue of functional form choice in hedonic price functions: Further evidence," with John Halstead and Rachel Bouvier, *Environmental Management* (1997), 21, 759-765.
- [24] "Inference in TAR models," *Studies in Nonlinear Dynamics and Econometrics*, (1997), 2.
- [25] "Testing for linearity," *Journal of Economic Surveys* (1999), 13, 551-576.
- [26] "Threshold effects in non-dynamic panels: Estimation, testing, and inference," *Journal of Econometrics* (1999), 93, 345-368.
- [27] "The grid bootstrap and the autoregressive model," *Review of Economics and Statistics* (1999), 81, 594-607.
- [28] "Sample splitting and threshold estimation" *Econometrica* (2000), 68, 575-603.
- [29] "Testing for structural change in conditional models," *Journal of Econometrics* (2000), 97, 93-115.
- [30] "Threshold autoregression with a unit root," with Mehmet Caner, *Econometrica* (2001), 69, 1555-1596.

- [31] "The new econometrics of structural change: dating changes in U.S. Labor Productivity, *Journal of Economic Perspectives*, (2001), 15, 117-128.
- [32] "Testing for two-regime threshold cointegration in vector error-correction models," with Byeongseon Seo, *Journal of Econometrics* (2002), 110, 294-318.
- [33] "Generalized Method of Moments and Macroeconomics," with Kenneth West, *Journal of Business and Economic Statistics* (2002), 20, 460-469.
- [34] "On the Reliability of Recounts from Undervotes: Evidence from the 2000 Presidential Election," *Journal of the American Statistical Association* (2003), 98, 292-298.
- [35] "How responsive are private transfers to income? Evidence from a laissez-faire economy," with Donald Cox and Emmanuel Jimenez, *Journal of Public Economics* (2004), 88, 2193-2219.
- [36] "Instrumental variable estimation of a threshold model," with Mehmet Caner. *Econometric Theory*, (2004), 20, 813-843.
- [37] "Challenges for Econometric Model Selection," *Econometric Theory*, (2005), 21, 60-68.
- [38] "Exact Mean Integrated Squared Error of Higher-Order Kernel Estimators," *Econometric Theory*, (2005), 21, 1031-1057.
- [39] "Interval Forecasts and Parameter Uncertainty," *Journal of Econometrics* (2006), 135, 377-398.
- [40] "Edgeworth expansions for the Wald and GMM statistics for nonlinear restrictions," *Econometric Theory and Practice: Frontiers of Analysis and Applied Research* (2006), edited by Dean Corbae, Steven N. Durlauf and Bruce E. Hansen. Cambridge University Press.
- [41] "Least Squares Model Averaging," *Econometrica*, (2007), 75, 1175-1189.
- [42] "Uniform Convergence Rates for Kernel Estimation with Dependent Data," *Econometric Theory*, (2008), 24, 726-748.
- [43] "Least Squares Forecast Averaging," *Journal of Econometrics*, (2008), 146, 342-350.
- [44] "Averaging Estimators for Regressions with a Possible Structural Break," *Econometric Theory*, (2009), 35, 1498-1514.
- [45] "Averaging Estimators for Autoregressions with a Near Unit Root," *Journal of Econometrics*, (2010), 158, 152-155.
- [46] "Threshold autoregression in economics," *Statistics and Its Interface*, (2011), 4, 123-127.
- [47] "Jackknife model averaging," with Jeffrey Racine, *Journal of Econometrics*, (2012), 167, 38-46.
- [48] "Nonparametric Sieve Regression: Least Squares, Averaging Least Squares, and Cross-Validation," *The Oxford Handbook of Applied Nonparametric and Semiparametric Econometrics and Statistics*, (2014), edited by Jeffrey S. Racine, Liangjun Su, and Aman Ullah, Oxford University Press.

- [49] "Model averaging, asymptotic risk, and regressor groups," *Quantitative Economics*, (2014), 5, 495-530.
- [50] "Asymptotic Moments of Autoregressive Estimates with a Near Unit Root and Minimax Risk," in Yoosoon Chang, Thomas B. Fomby, Joon Y. Park (ed.) *Advances in Econometrics*, (2014), 33, 3-21.
- [51] "Purchasing Power Parity and the Taylor Rule," with Hyeongwoo Kim, Ippei Fujiwara, and Masao Ogaki, *Journal of Applied Econometrics*, (2015), 30, 874-903
- [52] "The Integrated Mean Squared Error of Series Regression and a Rosenthal Hilbert-Space Inequality," *Econometric Theory*, (2015), 31, 337-361.
- [53] "Forecasting with Factor-Augmented Regression: A Frequentist Model Averaging Approach," with Xu Cheng, *Journal of Econometrics*, (2015), 186, 280-293.
- [54] "Shrinkage Efficiency Bounds," *Econometric Theory*, (2015), 31, 860-879.
- [55] "Efficient Shrinkage in Parametric Models," *Journal of Econometrics*, (2016) 190, 115-132.
- [56] "Minimum Mean Squared Error Model Averaging in Likelihood models," with Gerda Claeskens and Ali Charkhi, *Statistica Sinica*, (2016), 26, 809-840.
- [57] "The Risk of James-Stein and Lasso Shrinkage," *Econometric Reviews*, (2016), 35, 1456-1470.
- [58] "Regression Kink with an Unknown Threshold," *Journal of Business and Economic Statistics*, (2017), 35, 228-240.
- [59] "A Stein-Like 2SLS Estimator," *Econometric Reviews*, (2017).
- [60] "Time series econometrics for the 21st century," *The Journal of Economic Education*, (2017) 4,48, 137-145.
- [61] "Johansen's Reduced Rank Estimator is GMM," *Econometrics*, forthcoming.

Textbook

Econometrics

Graduate Textbook (draft)

<http://www.ssc.wisc.edu/~bhansen/econometrics/>

Edited Volume

Econometric Theory and Practice: Frontiers of Analysis and Applied Research, edited by Dean Corbae, Steven N. Durlauf and Bruce E. Hansen. (2006) Cambridge University Press.

Reviews and Comments

- [1] "Discussion of 'Data Mining Reconsidered' by Kevin Hoover and Stephen Perez," *Econometrics Journal* (1999), 2, 192-201.
- [2] "Book Review: *Handbook of Econometrics*, Volume 4," with Joel Horowitz, *Econometric Theory* (1997), 13, 119-132.
- [3] "Book Review: *Time Series Analysis* by James D. Hamilton," *Econometric Theory* (1995), 11, 625-631.
- [4] Comment on "Testing for common features" by R. Engle and S. Kozicki, *Journal of Business and Economic Statistics* (1993), p. 385-386.
- [5] Comment on "Further evidence on business cycle duration dependence" by F.X. Diebold, G.D. Rudebusch and D.E. Sichel, *Business Cycles, Indicators, and Forecasting*, ed. J.H. Stock and M.W. Watson (1993), p. 280-284.
- [6] Comment on "Feature Matching in Time Series Modeling" by Yingcun Xia and Howell Tong, *Statistical Science*, (2011), 26, 47-48.
- [7] "Guest Editors Introduction: The Special 18th Meeting of the New Zealand Econometric Study Group in Honor of Peter C. B. Phillips," with Joon Park, *Econometric Theory* (2014), 30, 715-718.
- [8] Comment on "In-sample inference and forecasting in misspecified factor models" by M. Carrasco and B. Rossi, with Xu Cheng, *Journal of Business and Economic Statistics* (2016), 34, p. 345-347.

Special Courses

December 1996

Workshop of the Netherlands Network of Economics, Maastricht, Netherlands
"The Econometrics of Structural Change"
5-day course for graduate students

June 2004

Centro Interuniversitario di Econometria (CIDE) Summer School, Bertinoro, Italy
"Structural Change and Threshold Models"
5-day course for graduate students

August 2010

International Monetary Fund
"Forecast Combination"
1-day course for IMF Staff

November 2010

UC Riverside
Distinguished visitor

September 2011

Boston University
Distinguished visitor
5-day course for graduate students

October 2011

International Monetary Fund
"Forecasting"
3-day course for IMF Staff

July 2012

Advanced Summer School in Economics and Econometrics, University of Crete
"Time Series and Forecasting"
5-day course for graduate students

October 2013

Central Bank of Chile
"Forecasting"
3-day course for CBC staff

October 2014

Statistics Norway
"Forecasting Combination, Threshold, & Nonlinear Autoregression"
2-day course for staff

June 2017

University of Aarhus
"Selection and Shrinkage in Nonparametric Regression"
2-day, 4-lecture short course

Conference Presentations

1987 Econometric Society Summer Meetings

1990 ENSAE Conference on ARCH Models (Paris)

World Congress of the Econometric society, Barcelona

Canadian Econometric Study Group

Econometric Society Winter Meetings

1991 Conference on Nonlinear Dynamics and Econometrics, UCLA

NBER conference on "Business cycles, leading indicators and forecasting"

- Econometric Society Summer Meetings
- 1992 Econometric Society Winter Meetings
 - Yale Conference on Bayes Methods and Unit Roots
 - Yale Conference on Empirical processes and dependent random variables
 - Recent Developments in the Econometrics of Structural Change (University of Montreal)
- 1993 Econometric Society Winter Meetings
 - Yale/NSF Conference on Multiple Trending Time Series
 - EC² Conference (Oxford University)
- 1994 Econometric Society Winter Meetings
- 1996 Econometric Society Winter Meetings
 - Society for Nonlinear Dynamics and Econometrics
 - NBER Summer Institute – Forecasting Workshop
 - Canadian Econometric Study Group
 - Bergamo Conference on Applied Economics
 - NBER/NSF Time Series Conference (Rotterdam)
- 1997 Econometric Society Winter Meetings
- 1998 Econometric Society Winter Meeting
 - NBER Summer Institute – Forecasting Workshop
 - Mid-West Econometrics Group
- 1999 Econometric Society Winter Meeting
 - Econometric Society Summer Meeting
 - Econometric Society Latin American Meeting
 - Cowles Econometrics Conference
- 2000 Econometric Society Winter Meeting
 - Cardiff conference on long memory and nonlinear time series
 - ESRC Econometric Study Group Conference, Bristol
 - World Congress of the Econometric society, Seattle
- 2001 Joint Statistical Meetings
 - Econometric Society European Meeting
 - Exchange Rate conference (UW Madison)
- 2003 Econometric Society Winter Meeting
 - North Triangle Econometrics Conference (keynote speaker)
- 2004 Econometric Society Winter Meeting
 - Retirement Conference for Clive Granger (UCSD)
 - Texas Camp Econometrics (keynote speaker)
 - Joint Statistical Meetings
- 2005 Canadian Econometrics Study Group (keynote speaker)
- 2006 Econometrics in Rio (keynote speaker)
 - Midwest Econometrics Group (keynote speaker)
 - New York Area Econometrics conference
- 2007 20 Years of Cointegration, Tinbergen Institute (keynote speaker)
 - NBER-NSF Time Series Conference
 - Conference in Honor of Paul Newbold, University of Nottingham (keynote speaker)
 - EC²: Recent Advances in Econometric Time Series (Faro, Portugal) (keynote speaker)
- 2008 London Time Series Workshop (keynote speaker)
 - Dutch Econometrics Study Group (keynote speaker)
 - UK Econometrics Study Group (keynote speaker)
- 2009 CIREQ Time Series Conference (Montreal)
- 2010 World Congress of the Econometric society, Shanghai

- Midwest Econometrics Group
 CIREQ Time Series Conference (Montreal)
- 2011 Yale Economics Alumni Conference
 Econometric Society Summer Meeting
 Econometric Society Australasian Meeting (keynote speaker)
 Joint Statistical Meetings
 Info Metrics Workshop on Shrinkage at American University
- 2012 CIREQ conference on High Dimensional Problems in Econometrics
 Vienna conference on statistical inference in complex/high-dimensional problems
- 2013 CIREQ conference on Time Series and Financial Econometrics (Montreal)
 International Conference on Econometrics, Operations Research, and Statistics (Sarajevo) (keynote speaker)
 Workshop on “Model Selection, Nonparametrics, and Dependence” (Rennes, France)
 Advances in Econometrics Conference in Honor of Peter C. B. Phillips (SMU)
 High-Dimensional Econometric Models (CEMMAP, London)
 5th French Econometrics Conference (Toulouse) (keynote speaker)
- 2014 Texas Econometrics Camp (keynote speaker)
 Tsinghua Conference in Econometrics (Beijing, China) (keynote speaker)
 SETA 2014 (Academia Sinica, Taipei) (keynote speaker)
 Interactions (University of Chicago)
 Econometrics Conference in Honor of Essie Maasoumi
- 2015 Econometric Society Winter Meetings
 International Association of Applied Econometrics, Thessaloniki, Greece
 Crete 2015 (Conference on Research in Economics and Econometrics), Chania, Greece (keynote)
 Frontiers of Theoretical Econometrics, University of Konstanz, Germany
 World Congress of the Econometric Society, Montreal
- 2016 Royal Economic Society Annual Conference, Brighton, UK
 International Symposium in Computational Economics and Finance, Paris, France (keynote)
 Barcelona GSE Summer Forum, Barcelona, Spain
 International Association of Applied Econometrics, Milan, Italy
 International Ioannina Meeting on Applied Economics and Finance, Corfu, Greece (keynote)
 Midwest Econometrics Group, University of Illinois
- 2017 ASSA “Updating the Undergraduate Econometrics Curriculum” (Chicago)
 CIREQ conference on Inference in Large Econometric Models (Montreal)
 New York Camp Econometrics (Lake Placid) (keynote speaker)
 International Association of Applied Econometrics, Sapporo, Japan (keynote speaker)
 Cornell-Penn State Conference on Econometrics and Industrial Organization (keynote speaker)
- 2018 ASSA Winter Meetings (AEA-KAEA)
 Notre Dame mini-conference on Econometrics

Seminar Presentations

- 1989 Queen's University
University of Rochester
- 1990 Indiana University
UCLA
Yale University
- 1991 University of Pennsylvania
Northwestern University
Oxford University
University of Alberta
University of Saskatchewan
University of Wisconsin – Madison
University of Iowa
UCLA
MIT
- 1992 UCSD
John Hopkins University
University of Michigan
McGill University
University of Montreal
Queen's University
Princeton University
University of Illinois
Northwestern University
Cornell University
- 1993 Washington University, Finance Department
Columbia University
Syracuse University
University of Texas – Austin
Rice University
Erasmus University
- 1994 UCLA
USC
UC Irvine
Cal Tech
Penn State University
Ohio State University
Boston College
Board of Governors, Federal Reserve System
Harvard University
- 1995 Yale University
Texas A&M University
Southern Methodist University
- 1996 Cornell University
Brown University
SUNY Albany
University of New Hampshire
University of Rochester

University of Michigan
Michigan State University
Tilburg University
1997 University of Maryland
M.I.T.
Northwestern University
University of Chicago
New York Federal Reserve Bank
University of Guelph
Princeton University
University of Wisconsin, Madison
University of Pennsylvania
University of Michigan
1998 Duke University
Harvard University
New York University
University of Kansas
St. Louis Federal Reserve Board
University of Southern California/UCLA
University of Illinois, Urbana-Champaign
University of Iowa
1999 Board of Governors (Visiting Scholar, Two presentations)
Northern Illinois State University
Northwestern University
Iowa State University
UW Chaos and Complexity Seminar
2000 University of Virginia
University of Montreal
2001 University of Pittsburgh
2004 Southern Methodist University
Princeton University
University of Chicago GSB
Ohio State University
University of Rochester
UC Riverside
UCSD
Stanford
UCLA
2005 Harvard University
2006 Duke University
McMaster University
Texas A&M University
New York University
2007 University of Pittsburgh
Columbia University
2008 University of British Columbia
Queen's University
University of Montreal
Indiana University

Yale University
Michigan State University
2009 NYU Stern School, Statistics Department
University of Southern California
Carnegie Mellon University, Statistics Department
Brown University
Purdue University
Northwestern University
2010 UC Riverside
UW Madison, Statistics Department
2011 ITAM (Mexico)
University of Pennsylvania
Boston University
Penn State University
Queen's University
University of Michigan
2012 UW Milwaukee
Rice University
MIT/Harvard
2013 University of Chicago Booth School of Business
University of Rochester
Columbia University
Central Bank of Chile
Oxford University
Cambridge University
2014 Texas A&M University
Boston College
Penn State University
National University of Singapore
Hong Kong University of Science and Technology
Chinese University of Hong Kong
MIT/Harvard
Montreal Area Econometrics Workshop (Concordia University)
Cornell University
University of Maryland
Georgetown University
University of Chicago
2015 Yale University
University of Michigan
New York University
Simon Fraser University
University of British Columbia
Princeton University
2016 Ohio State University
Northwestern University
Cornell University
Occidental College
UCLA
KU Leuven

2017 University of Missouri
University of Nottingham (Granger Lecture)
University of York
University of Lancaster
University of Exeter
Aarhus University (Creates Distinguished Speaker Lecture)
University of Pennsylvania
Rutgers University

Consulting and Outside Activities

State of Wisconsin Investment Board

8/2012 – present

Twice monthly office hours for SWIB staff

Social Security Administration

September 2013

“Uncovering the Relationship between Real Interest Rates and Economic Growth”

Co-authored with Ananth Seshadri

Research paper for SSA

Southern Methodist University

November 2014

External review committee for SMU economics department

Wisconsin Employee Relocation Council

December 2016

Guest speaker on “The Economy Going Forward”