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

May 2017


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| Address: | Department of Economics<br>Social Science Building, 1180 Observatory Drive<br>University of Wisconsin<br>Madison, WI 53706-1393 |
| Telephone: | (608) 263-3880 |
| Email: | bruce.hansen@wisc.edu |
| url: | www.ssc.wisc.edu/~bhansen |
| 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 |

**Honors and Awards**

Fellow, Econometric Society, 2000
Fellow, Journal of Econometrics, 2000
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 | *Econometric Theory* |
| 1996-2008 | Associate Editor | *Econometrica* |
| 1992-1995 | Associate Editor | *Econometric Theory* |
| 2011- | Board of Directors | National Bureau of Economic Research |

## 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***, forthcoming.

[59] “A Stein-Like 2SLS Estimator,” ***Econometric Reviews***, (2017).

[60] “Time series econometrics for the 21st century,” ***The Journal of Economic Education***, 48, 137-145.

## 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)

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| 1993 | Econometric Society Winter Meetings |
| | Yale/NSF Conference on Multiple Trending Time Series |
| | $EC^2$ 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) |
| | $EC^2$: 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)

**Seminar Presentations**

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|---|---|
| 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 |

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| | 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-Champagne |
| | 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 |

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|---|---|
| | 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 |

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

**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"