# XIAOHONG CHEN
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Yale University
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**Fields:** Econometric theory, Semi/nonparametric estimation and inference methods, Sieve methods, Nonlinear time series, Semi/nonparametric models (copula, missing data, measurement error, nonparametric instrumental variables, semi/nonparametric conditional moment, empirical asset pricing, learning).

## Education:

Doctor of Philosophy (Economics), July 1993, University of California, San Diego, USA
Master of Arts (Economics), May 1988, University of Western Ontario, Canada
USA-China Ford Economic Graduate Training Program, July 1987, Renmin University.
Bachelor of Science (Mathematics), July 1986, Wuhan University, China

## Employment History:

03/14-present        Malcolm K. Brachman Professor of Economics, Professor of Management and of Statistics & Data Science, Yale University.
07/07-02/14    Professor of Economics, Yale University
08/05-06/07    Professor of Economics, New York University
07/02-07/05    Associate professor, New York University
10/00-11/02    Reader, Department of Economics, London School of Economics
7/99-9/00      Lecturer, Department of Economics, London School of Economics
9/93-6/99      Assistant Professor, Department of Economics, University of Chicago

## Academic Affiliations:

07/2007-present   Cowles Foundation Research Staff, New Haven, USA
05/2007-present   International Fellow of Cemmap (Centre for Microdata Methods and Practice), London, UK.
05/2020-05/2020 Luohan Academy's Distinguished Fellow

**Visiting Positions**:

03/2019          Tan Chin Tuan Visiting Professor of National University of Singapore.

11/2017          Visiting Professor, University of Cambridge, UK

10/2017          Visiting Professor, Princeton University.

11/2015          Visiting Professor of the Stevanovich Center, University of Chicago
10/2015          Visiting Professor, Weierstrass Institute/Berlin
03/2015          Visiting Professor, University of Southern California
09 - 12/2014     Visiting Professor, Harvard University
11/2013          Visiting Professor, Princeton University
10 - 11/2011     Visiting Professor, UC Berkeley
06/2011          Visiting Professor, Weierstrass Institute/Berlin
03/2011          Visiting Professor, CEMFI/Madrid
12/2007          Visiting Professor, Toulouse School of Economics
04/2007          Visiting Professor, Northwestern University
09/2006-05/2007       Visiting Professor, Cowles Foundation, Yale University
03 - 04/2006     Visiting Professor, Cowles Foundation, Yale University
06 - 07/2005     Visiting Professor, Humboldt University at Berlin
09/2001-07/2002       Visiting Scholar, Princeton University
08 - 09/2001     Visiting Scholar, University of Illinois, Urbana- Champaign
05/2000     Visiting Scholar, Universitat Pompeu Fabra, guest lecturing on learning


**Honors**:

Member of the American Academy of Arts and Sciences, elected 2019.

2018 Sargan Lecturer, Econometric Society.

Fellow of Journal of Econometrics, since 2012.

Fellow of the Econometric Society, elected 2007.

Hilda Geiringer Lecture, November 2019, Berlin.

ET lecturer, Symposium on Econometric Theory and Applications (SETA) 2017, June, Beijing University, China.


**Awards:**

2017 China Economics Prize, (shared with Gregory Chow).

Econometric Theory Multa Scripsit Award, 2012

The winner of The Journal of Nonparametric Statistics 2010 Best Paper Award. The awarded paper is ``Identification and estimation of nonlinear models using two samples with nonclassical measurement errors'', 2010, 22, p. 379-399 by R. Carroll, X. Chen and Y. Hu.

The winner of The Richard Stone Prize in Applied Econometrics for the years 2008 and 2009. The awarded paper is ``Land of Addicts? An Empirical Investigation of Habit-Based Asset Pricing Models'', 2009, 24, 1057-1093 by X. Chen and S. Ludvigson.

The winner of The Arnold Zellner Award for the best theory paper published in *Journal of Econometrics* in 2006 and 2007. The awarded paper is "Estimation of copula-based semiparametric time series models", 130(2), 307-335, by X. Chen and Y. Fan (2006).

**Keynote /Invited Presentations**

Invited speaker, 2006 European Meeting of the Econometric Society, EEA-ESEM, Vienna, August 24-28.

Invited speaker, 10th World Congress Meeting of the Econometric Society, Shanghai, August, 2010.

Invited lectures on ``sieve estimation and inference of semi-nonparametric time series models'', CEMFI, Madrid, March 9-17, 2011.

Invited speaker, 2011 Econometric Society Australasia Meeting, Adelaide, July 5 – 8.

Invited speaker, 2011 Asian Meeting of the Econometric Society, Seoul, Korea, August 11 – 13.

Invited lectures on ``semi-nonparametric models and methods'', Cemmap mastersclass, London, May 10-11, 2012.

Invited lectures on ``sieve estimation and inference methods'', University of Tokyo, Japan, July 5 - 7, 2012.

Invited speaker, Symposium on Econometric Theory and Applications (SETA) 2013, July 20-21, SKKU, Seoul, Korea

Invited speaker, 2013 Asian Meeting of the Econometric Society, Singapore, August 2-4.

Keynote speaker, International Conference on Financial Econometrics, July 6-7, 2013, Shandong University, China.

Keynote speaker, ``Copula and Dependence'' Conference, October 11-12, 2013, Columbia University.

Invited dinner speaker, 2013 meeting Midwest Econometrics Group (MEG), October 25-26, Indiana University.

Invited speaker, Symposium on Econometric Theory and Applications (SETA) 2014, May 29-30, Institute of Economics, Academia Sinica, Taipei, Taiwan.

Keynote speaker, SJTU-SMU Econometrics Conference, July 1-2, 2014, Shanghai Jiao Tong University, China.

Keynote speaker, International Conference on Econometrics, June/2016; July/2018 Shandong University, China.

Invited speaker, 2016 China Meeting of the Econometric Society, Chengdu.

Invited speaker, 2017 China Meeting of the Econometric Society, Wuhan.

Invited lectures on ``penalized sieve estimation and inference on semi-nonparametric models'', National Taiwan University, Taiwan, March 11-16, 2018.

Invited speaker, 2018 China Meeting of the Econometric Society, Shanghai.

Keynote speaker, International Conference on Econometrics and Statistics, July/2018 Renmin University, China.

Invited lectures on ``sieve estimation and inference on semi-nonparametric models'', Shandong University,  China, July 4 - 7, 2018.

Keynote speaker, 2019 China Meeting of the Econometric Society, June 18-20, Jinan University, Guangzhou.

Keynote speaker, 2019 Tsinghua International Econometrics Conference, June 22-23, Beijing.

Invited semi-plenary speaker, North American Summer Meeting of the Econometric Society, June 28-30, 2019, University of Washington, Seattle.

Keynote speaker, 2021 China Meeting of the Econometric Society, Shanghai.


**Editorial Services:**

Editor, *Journal of Econometrics*, January 1, 2019 - present

Associate Editor, *Econometrica*, July 1, 2009 – June 30, 2012; July 1, 2014 – June 30, 2020.
Associate Editor, *Quantitative Economics*, July 1, 2013 – June 30, 2018.
Associate Editor, *Journal of Econometrics*, April 2009 – December 2018.
Associate Editor, *The Econometrics Journal*, May 2007 – December 2018.
Associate Editor, *Journal of Econometric Methods*, 2018-present.
Associate Editor, *The Berkeley Journal of Time Series Econometrics*, May 2007 – present
Editor, *Foundations and Trends in Econometrics*, 2004 - present
Editorial Board, *Annals of Economics and Finance*, 1999 – present
Editorial Board, *Frontiers of Economics in China*, 1999 – present
Associate Editor, *Econometric Theory*, Jan. 2005 – December 2013
Associate Editor, *Journal of Nonparametric Statistics*, Jan. 2009 – Jan. 2011
Editorial Board, *Review of Economic Studies,* Jan. 2001 – Dec. 2004


**Publications and Forthcoming Papers:**

``Robust Identification of Investor Beliefs'' by X. Chen, Lars Peter Hansen and Peter Hansen, 2020, *PNAS*. https://www.pnas.org/cgi/doi/10.1073/pnas.2019910117

``Copula-based Time Series With Filtered Nonstationarity'' by X. Chen, Zhijie Xiao and Bo Wang, 2020, *Journal of Econometrics,*
https://doi.org/10.1016/j.jeconom.2020.10.008

``Efficient Estimation of Multivariate Semi-nonparametric GARCH Filtered Copula Models'' by X. Chen, Z. Huang and Y. Yi, *Journal of Econometrics,*
https://doi.org/10.1016/j.jeconom.2020.07.012

``Penalized Sieve GEL for Weighted Average Derivatives of Nonparametric Quantile IV Regressions'' by X. Chen, D. Pouzo and JL Powell, *Journal of Econometrics*, 2019, 213, 30-53.

``Semiparametric Estimation of the Bid-Ask Spread in Extended Roll Models'' by X. Chen, O. Linton, S. Schneeberger and Y. Yi, *Journal of Econometrics*, 2019, 208, 160-178.

``Monte Carlo confidence sets for identified sets,'' by X. Chen, T. Christensen and E. Tamer, ***Econometrica***, 2018, vol. 86, no. 6, 1965–2018.

``Overidentification in Regular Models'' by X. Chen and A. Santos, ***Econometrica***, 2018, vol. 86, no. 5, 1771-1817.

``Optimal Sup-norm Rates and Uniform Inference on Nonlinear Functionals of Nonparametric IV Regression'' by X. Chen and T. Christensen, *Quantitative Economics*, 2018, vol. 9, 39-84.

``Semiparametric Identification of the Bid-Ask Spread in Extended Roll Models,'' by X. Chen, O. Linton and Y. Yi, *Journal of Econometrics*, 2017, 200, 312-325.

``A Reverse Gaussian Correlation Inequality by Adding Cones,'' by X. Chen and F. Gao, *Statistics and Probability Letters*, 2017, 123, 84-87.

``Methods for Nonparametric and Semiparametric Regressions with Endogeneity: A Gentle Guide,'' by X. Chen and Y. Qiu, *Annu. Rev. Econ.* 2016. 8: 259-90.

``Self-Normalized Cramer Type Moderate Deviations under Dependence'' by X. Chen, Q.M. Shao, W.B. Wu and L. Xu, ***Annals of Statistics***, 2016, 44, 1593-1617.

"Averaging of an Increasing Number of Moment Condition Estimators" by X. Chen, D. Jacho-Chávez and O. Linton, *Econometric Theory*, 2016, 32, 30-70.

``Sieve Semiparametric Two-step GMM Under Weak Dependence'' by X. Chen and Z. Liao, *Journal of Econometrics*, 2015, 189, 163-186.

``Sieve Wald and QLR Inferences on Semi/nonparametric Conditional Moment Models'' by X. Chen and D. Pouzo, ***Econometrica***, 2015, 83, 1013-1079.

``Optimal Uniform Convergence Rates and Asymptotic Normality for Series Estimators Under Weak Dependence and Weak Conditions'' by X. Chen and T. Christensen, *Journal of Econometrics*, 2015, 188, 447-465.

``High Dimensional Generalized Empirical Likelihood for Moment Restrictions with Dependent Data'' by J. Chang, S. Chen and X. Chen, *Journal of Econometrics*, 2015, 185, 283-304.

``Asymptotic Efficiency of Semiparametric Two-step GMM'' by D. Ackerberg, X. Chen, J. Hahn and Z. Liao, **Review of Economic Studies**, 2014, 81(3), 919-943.

``Local Identification of Nonparametric and Semiparametric Models'' by X. Chen, V. Chernozhukov, S. Lee and W. Newey, **Econometrica**, 2014, 82, 785-809.

``Likelihood Inference in Some Finite Mixture Models'' by X. Chen, M. Ponomareva and E. Tamer, *Journal of Econometrics*, 2014, 182, 87-99.

``Sieve M Inference on Irregular Parameters'' by X. Chen and Z. Liao, *Journal of Econometrics*, 2014, 182, 70-86.

``Recursive Nonparametric Estimation for Time Series'' by Y. Huang, X. Chen and W. Wu, *IEEE Information Theory,* 2014, 60, 1301-1312.

``Sieve Inference on Possibly Misspecified Semi-nonparametric Time Series Models'' by X. Chen, Z. Liao and Y. Sun, *Journal of Econometrics*, 2014, 178, 639-658.

``Efficient Estimation of Semiparametric Copula Models for Bivariate Survival Data'' by G. Cheng, L. Zhou, X. Chen and J. Huang, *Journal of Multivariate Analysis*, 2014, 123, 330-344.

``Comment on `Generalized Jackknife Estimators of Weighted Average Derivatives' by Cattaneo, Crump and Jansson'' by X. Chen, *Journal of the American Statistical Association*, December 2013, 108, 1262-64.

``Penalized Sieve Estimation and Inference of Semi-nonparametric Dynamic Models: A Selective Review'' by X. Chen, in *Advances in Economics and Econometrics*, 2010 World Congress of the Econometric Society book volumes, Cambridge University Press, 2013.

``An Estimation of Economic Models with Recursive Preferences'' by X. Chen, J. Favilukis and S. Ludvigson, *Quantitative Economics,* 2013, 4(1), 39-83

``Fast Convergence Rates in Estimating Large Volatility Matrices Using High-Frequency Financial Data'' by M. Tao, Y. Wang and X. Chen, *Econometric Theory,* 2013, 29, 838-856.

``Estimation of Nonparametric Conditional Moment Models with Possibly Nonsmooth Generalized Residuals'' by X. Chen and D. Pouzo, **Econometrica**, 2012, 80, 277-321.

``The Semiparametric Efficiency Bound for Models of Sequential Moment Restrictions Containing Unknown Functions'' by C. Ai and X. Chen, *Journal of Econometrics*, 2012, 170, 442-457.

``Asymptotic Properties of Penalized M Estimators with Time Series Observations'' by X. Chen and Z. Liao, in X. Chen and N. Swanson (eds.) *Causality, Prediction, and Specification Analysis: Essays in Honor of Halbert White*. Berlin: Springer-Verlag 2013.

``A Practical Asymptotic Variance Estimator for Two-Step Semiparametric Estimators'' by D. Ackerberg, X. Chen and J. Hahn, *Review of Economics and Statistics*, 2012, 94, 482-498.

``Nonlinear Models of Measurement Errors'' by X. Chen, H. Hong and D. Nekipelov, 2011, *Journal of Economic Literature*, 49:4, 901-937.

``On Rate Optimality for Ill-posed Inverse Problems in Econometrics'' by X. Chen and M. Reiss, *Econometric Theory*, 2011, 27, 497-521.

``Flexible Estimation of Treatment Effect Parameters'' by T. MaCurdy, X. Chen and H. Hong, *American Economic Reviews: Papers and Proceedings*, 2011, 101:3, 1-10.

``Identification and Estimation of Nonlinear Models Using Two Samples with Nonclassical Measurement Errors'' by R. Carroll, X. Chen and Y. Hu, *Journal of Nonparametric Statistics*, 2010, 22, p. 379-399, invited paper with discussions. The winner of **The Journal of Nonparametric Statistics 2010 Best Paper Award**

"Nonlinearity and Temporal Dependence'' by X. Chen, L. P. Hansen and M. Carrasco, *Journal of Econometrics,* 2010, 155, 155-169.

``Estimation and model selection of semiparametric multivariate survival functions under general censorship'' by X. Chen, Y. Fan, D. Pouzo and Z. Ying, *Journal of Econometrics*, 2010, vol. 157, p. 129-142.

"Nonlinear Principal Components and Long Run Implications" by X. Chen, L. P. Hansen and J. Scheinkman, **Annals of Statistics**, 2009, 37(6B), 4279-4312.

``Efficient estimation of copula-based semiparametric Markov models'' by X. Chen, W. Wu and Y. Yi, **Annals of Statistics**, 2009, 37(6B), 4214-4253.

``Land of Addicts? An Empirical Investigation of Habit-Based Asset Pricing Models'' by X. Chen and S. Ludvigson, *Journal of Applied Econometrics,* 2009, 24, 1057-1093. The winner of **The Richard Stone Prize** for the years 2008 and 2009.

``Efficient Estimation of Semiparametric Conditional Moment Models with Possibly Nonsmooth Residuals'' by X. Chen and D. Pouzo, *Journal of Econometrics*, 2009, vol. 152, pp. 46-60.

``Copula-Based Nonlinear Quantile Autoregression'' by X. Chen, R. Koenker, and Z. Xiao, 2009, *the Econometrics Journal*, vol. 12, pp. 50-67

``On Nonlinear Ill-posed Inverse Problems with Applications to Pricing of Defaultable Bonds and Option Pricing'' by X. Chen and D. Pouzo, *Science in China, Series A: Mathematics*, June 2009, vol. 52, no. 6, 1157-1168.

``Nonparametric identification and estimation of nonclassical errors-in-variables models without additional information'' by X. Chen, Y. Hu and A. Lewbel, *Statistica Sinica,* 2009, vol. 19, 949-968.

``Statistical Inference for Multivariate Residual Copula of Garch Models'' by N. Chan, J. Chen, X. Chen, Y. Fan and L. Peng, *Statistica Sinica,* 2009, 19, 53-70.

``Semiparametric Efficiency in GMM Models with Auxiliary Data'' by X. Chen, H. Hong and A. Tarozzi, ***Annals of Statistics****,* 2008, 36, 808-843.

``Nonparametric identification of regression models containing a misclassified dichotomous regressor without instruments'' by X. Chen, Y. Hu and A. Lewbel, 2008, *Economics Letters*, 100, 381-384.

``A Note on the Closed-form Identification of Regression Models with a Mismeasured Binary Regressor'' by X. Chen, Y. Hu and A. Lewbel, 2008, *Statistics and Probability Letters*, 78, 1473-1479.

"Semi-Nonparametric IV Estimation of Shape Invariant Engel Curves'' by R. Blundell, X. Chen and D. Kristensen, 2007, ***Econometrica***, 75, 1613-1670.

"Estimation of Possibly Misspecified Semiparametric Conditional Moment Restriction Models with Different Conditioning Variables" by C. Ai and X. Chen, 2007, *Journal of Econometrics*, vol. 141, 5-43.

``Nonparametric Likelihood Ratio Model Selection Tests between Parametric Likelihood and Moment Condition Models'' by X. Chen, H. Hong and M. Shum, 2007, *Journal of Econometrics*, vol. 141, 109-140.

``A Model Selection Test for Bivariate Failure-Time Data'' by X. Chen and Y. Fan, *Econometric Theory*, 2007, vol. 23, 414-439.

``Large Sample Sieve Estimation of Semi-nonparametric Models'' by X. Chen, chapter 76 in *Handbook of Econometrics*, *Vol. 6B*, 2007, eds. James J. Heckman and Edward E. Leamer, North-Holland.

``Sieve Extremum Estimation'' by X. Chen, entry for *The New Palgrave Dictionary of Economics*, 2nd edition: edited by Steven Durlauf and Lawrence Blume, 2007.

``Efficient Estimation of Semiparametric Multivariate Copula Models'' by X. Chen, Y. Fan and V. Tsyrennikov, *Journal of the American Statistical Association*, 2006, vol. 101, issue 475, 1228-1240.

``Estimation and Model Selection of Semiparametric Copula-based Multivariate Dynamic Models under Copula Misspecification'' by X. Chen and Y. Fan, *Journal of Econometrics,* 2006, Vol. 135, 125-154

``Estimation of Copula-based Semiparametric Time Series Models'' by X. Chen and Y. Fan, *Journal of Econometrics,* 2006, Vol. 130, 307-335, **winner of the 2008 Arnold Zellner award** for the years 2006 and 2007.

``Pseudo-Likelihood Ratio Tests for Semiparametric Multivariate Copula Model Selection'' by X. Chen and Y. Fan, *Canadian Journal of Statistics*, 2005, Vol. 33(3), 389-414.

``Measurement Error Models with Auxiliary Data'' by X. Chen, H. Hong and E. Tamer, ***Review of Economic Studies,*** 2005, 72, 343-366.

``Evaluating Density Forecasts via the Copula Approach'' by X. Chen and Y. Fan, 2004, *Finance Research Letters*, Vol. 1, 74-84.

"Estimation of Semiparametric Models When the Criterion Function is not Smooth," by X. Chen, O. Linton and I. van Keilegom, ***Econometrica***, 2003, 71, 1591-1608

"Efficient Estimation of Models with Conditional Moment Restrictions Containing Unknown Functions" by C. Ai and X. Chen, ***Econometrica*** 2003, 71, 1795-1843

``Comment on `Iterative and Recursive Estimation in Structural Non-Adaptive Models' by Pastorello, Patilea and Renault'' by X. Chen, 2003, *Journal of Business and Economic Statistics.*

"Asymptotic Properties of Some Projection-based Robbins-Monro Procedures in a Hilbert Space" by X. Chen and H. White, *Studies in Nonlinear Dynamics and Econometrics* 2002, vol. 6, issue 1, article 1.

"Mixing and Moment Properties of Various GARCH and Stochastic Volatility Models" by M. Carrasco and X. Chen, 2002, *Econometric Theory*, 18, 17-39.

"A New Semiparametric Spatial Model for Panel Time Series" by X. Chen and T. Conley, 2001, *Journal of Econometrics*, 105, 59-83.

"Semiparametric ARX Neural Network Models with an Application to Forecasting Inflation" by X. Chen, J. Racine and N. Swanson, 2001, *IEEE Transactions on Neural Networks,* 12, 674-683.

"Model Check by Kernel Methods under Weak Moment Conditions" by I. Ahmad, X. Chen and Q. Li, 2001, *Computational Statistics and Data Analysis,* 36, 403.

"The Estimation of Conditional Densities" by X. Chen, O. Linton and P. Robinson, *Asymptotics in Statistics and Probability, Festschrift for George Roussas* (M.L. Puri, ed.), VSP International Science Publishers, the Netherlands (2001), 71-84.

"Beta-mixing and Moment Properties of RCA Models with Application to GARCH (p,q)" by M. Carrasco and X. Chen, 2000, *Comptes Rendus de I'Academie des Sciences,* t.331, Series I, 85-90

"Improved Rates and Asymptotic Normality for Nonparametric Neural Network Estimators" by X. Chen and H. White, 1999. *IEEE Tran. Information Theory*, Vol. 45, 682-691.

"Consistent Hypothesis Testing in Semiparametric and Nonparametric Models for Econometric Time Series" by X. Chen and Y. Fan, 1999. *Journal of Econometrics,* 91, 373-401.

"Sieve Extremum Estimates for Weakly Dependent Data" by X. Chen and X. Shen, 1998, *Econometrica*, 66, 289-314.

"Nonparametric Adaptive Learning with Feedback" by X. Chen and H. White, Vol. 82, 1998. *Journal of Economic Theory*, 190-222.

"Central Limit and Functional Central Limit Theorems for Hilbert-Valued Dependent Heterogeneous Arrays with Applications" by X. Chen and H. White, 1998, *Econometric Theory*, 260-284.

"Laws of Large Numbers for Hilbert Space Valued Mixingales with Applications" by X. Chen and H. White, 1996, *Econometric Theory*, 12, 284-304.

**Papers under Revision:**

``Sensitivity Analysis in Semiparametric Likelihood Models'' (X. Chen, E. Tamer and A. Torgovitsky), Cowles Foundation Discussion Paper no 1836, revision requested by *Econometrica*.

``Identification and Inference in First-Price Auctions with Risk Averse Bidders and Selective Entry'' (X. Chen, M. Gentry, T. Li and J. Lu), 2020. Cowles Foundation Discussion Paper no . Revised and resubmitted to the *Review of Economic Studies*

``Adaptive Testing in Instrumental Variable Models'' (C. Breunig and X. Chen), 2020. Cowles Foundation Discussion Paper no 2238. Submitted.

``Robust Identification of Investor Beliefs'' (X. Chen, Lars P. Hansen and Peter G. Hansen) 2020. Cowles Foundation Discussion Paper no 2236. Submitted.

``Powerful Inference'' (X. Chen, S. Lee and M. Seo). 2020, ArXiv:2008.11140. Submitted.

``Efficient Estimation of General Treatment Effects Using Neural Networks With a Diverging Number of Confounders'' (X. Chen, Y. Liu, S. Ma and Z. Zheng) 2020. ArXiv:2009. Submitted.

``Heterogeneity and Aggregate Fluctuations'' (Minsu Chang, X. Chen, Frank Schorfheide). 2020


**Edited Volumes**:

Chen, X. and N. Swanson (2012): *Recent Advances and Future Directions in Causality, Prediction, and Specification Analysis: Essays in Honor of Halbert L. White Jr*. Berlin: Springer-Verlag.

Chen, X. and N. Swanson (2014): Causality, Prediction, and Specification Analysis: Recent Advances and Future Directions. *Journal of Econometrics*, 182.

Chen, X., S. Lee, O. Linton and E. Tamer (2014): Advances in Robust and Flexible Inference in Econometrics: A Special Issue in Honor of Joel L. Horowitz. *Econometrics Journal*, 17.


**Working Papers:**

``Efficient Estimation of Expectation Functionals of Nonparametric Conditional Moments via Neural Networks'' (joint with Jiafeng Chen and Elie Tamer), 2019.

``Optimal Sup-norm Rates, Adaptivity and Inference in Nonparametric Instrumental Variables Regression'' (joint with Tim Christensen), 2015, Cowles Foundation Discussion Paper no 1923R, arXiv:1508:03365v1.

``On Estimation and Inference of Functionals of Semiparametric Conditional and Unconditional Moment Models'' (joint with D. Pouzo). March 2009.

``On Efficient Sequential Estimation of Semi-nonparametric Moment Models'', (joint with C. Ai), August 2004, revised Nov. 2007.


**Old Working Papers:**

``Nonparametric Two-Step Sieve M Estimation and Inference'' by X. Chen, J. Hahn, Z. Liao and G. Ridder, Jan. 2013.

``Spectral Decomposition of Forms'' by X. Chen, L. P. Hansen and J. Scheinkman, December 2007. Yale University.

``Identification and Inference of Nonlinear Models Using Two Samples with Arbitrary Measurement Errors'' by X. Chen and Y. Hu, 2006, Cowles Foundation Discussion Paper No. 1590.

``Semiparametric Efficiency in GMM Models of Nonlinear Measurement Errors, Missing Data and Treatment Effects'' by X. Chen, H. Hong and A. Tarozzi, 2004, Cowles Foundation Discussion Paper No. 1644.

``Nonlinear Panel Data Models with Lagged Dependent Variables'', by X. Chen and E. Vytlacil, 2004, New York University.

``Simple Tests for Models of Dependence between Multiple Financial Time Series: with Applications to U.S. Equity Returns and Exchange Rates,'' by X. Chen, Y. Fan and A. Patton, 2003, New York University.

``Sup norm convergence rate and asymptotic normality for a class of linear sieve estimators'', by X. Chen and J. Huang, 2003, New York University and Wharton School, UPenn

``Dependence Properties of Multivariate Reversible Diffusions'', by X. Chen, May 2002, London School of Economics.

"Principal Components and the Long Run" by X. Chen, L. P. Hansen and J. Scheinkman, Oct. 2000, London School of Economics and University of Chicago.

"Non/Semiparametric Identification and Estimation of a Dynamic Discrete-Time Discrete-Choice Models with Unobserved Heterogeneity", by X. Chen, J. Heckman and E. Vytlacil, 1998, University of Chicago.

"Subordination and Temporal Dependence" by M. Carrasco, X. Chen and L. P. Hansen, 1998, University of Chicago.

"Consistent and Directional Tests via Functional Principal Component Analysis" by X. Chen and Y. Fan, 1998, University of Chicago.

"Shape-preserving Estimation of Diffusions" by X. Chen, L. P. Hansen and J. Scheinkman, 1997, University of Chicago.

"Asymptotic Properties of Sieve Penalized Estimates with Dependent Data," by X. Chen, 1996, University of Chicago.

"Nonparametric Recursive Moment Estimation with Dependent Data," by X. Chen, May 1995, University of Chicago.


**Old inactive projects:**

``Sieve QLR Inference on Partially Identified Semi-nonparametric Conditional Moment Models (with D. Pouzo and E. Tamer), December 2009.

``Copula-Based Semiparametric Quantile Autoregression'' (with Roger Koenker, and Zhijie Xiao)


**Professional Activities and Services:**

The 2020 Econometric Society Officers and Council Nominating Committee.
2020-2024, Council member of the Econometric Society.
2018-2021, Voting member of the Regional Standing Committee of the Econometric Society for Asia.
Search Committee for editor of Econometrica, 2018.
The 2015 Zellner Award Committee for *Journal of Econometrics*.
The 2012 Econometric Society Fellows Nominating Committee, Chair.
The 2011 Econometric Society Fellows Nominating Committee.
Search Committee for editor of Quantitative Economics, 2012.

Panelist, the National Science Foundation advisory panel on economics.
Panelist, the National Science Foundation advisory panel on mathematical, social and behavioral sciences.

Program committee member of the 10th World Congress Meeting of the Econometric Society (2010), (Shanghai).
Program committee member of the 9th World Congress Meeting of the Econometric Society (2005), (London).

Program committee member of 2010 North American Winter Meeting of the Econometric Society, (Atlanta).

Program committee member of 2008 North American Summer Meeting of the Econometric Society, (CMU).
Program committee member of 2007 North American Summer Meeting of the Econometric Society, (Duke).
Program committee member of 2006 North American Winter Meeting of the Econometric Society, (Boston).
Program committee member of 2004 North American Winter Meeting of the Econometric Society. (San Diego).

Program committee member of 2019 Asian Meeting of the Econometric Society (Xiamen, June, 2019).
Program committee member of 2017 Asian Meeting of the Econometric Society (Hong Kong, June, 2017).
Program committee member of 2013 Asian Meeting of the Econometric Society (Singapore, August 2 - 4, 2013).
Program committee member of the Inaugural China Meeting of the Econometric Society (Beijing, June 14 - 16, 2013).
Program committee member of 2012 Asian Meeting of the Econometric Society (Delhi).
Program committee member of 2011 Asian Meeting of the Econometric Society (Seoul).
Program committee member of 2009 Far East and South Asia Meeting of the Econometric Society (Tokyo).

Program committee member of 2007 European Meeting of the Econometric Society (ESEM), (Budapest).
Program committee member of 2006 European Meeting of the Econometric Society (ESEM), (Vienna).
Program committee member of 2002 European Meeting of the Econometric Society (ESEM), (Venice).
Program committee member of 2001 European Meeting of the Econometric Society (ESEM), (Lausanne).

Program Committee Member of 2016 Latin American Meetings of the Econometric Society, Medellin, Colombia.

Program committee member of 2007 International Symposium on Financial Engineering and Risk Management (FERM2007), Beijing/China.
Program committee member of 2003 IEEE Conference on Computational Intelligence in Financial Engineering (CIFER), (Hong Kong).

Director of Chinese Economist Scholars Association, 1995-1996

Referee for Economics Journals: *Econometrica, Journal of Political Economy, Review of Economic Studies, Journal of Econometrics, Econometric Theory, The Econometrics Journal, Management Science, The Review of Economics and Statistics, Econometric Review, Journal of Economic Dynamics and Control, Journal of Business and Economic Statistics, National Science Foundation (USA).*

Referee for Engineering Journals: *IEEE Transactions on Information Theory, IEEE Transactions on Neural Networks.*

Referee for Statistics Journals: *Journal of American Statistical Association, Scandinavian Journal of Statistics, Annals of Statistics, Bernoulli, Journal of Nonparametric Statistics, Biometrika, Finance and Stochastics, Statistics and Probability Letter.*

Midwest Econometric Group (MEG) 2013 Female Economists Mentoring Workshop, Oct 24-25, 2013, Indiana University

**Additional Invited Conference Talks and Invited Lectures**:

[] August 2017 Bayesian conference on nonlinear illposed inverse problem.
[] July 1-2 2017 International Conference in econometrics, Dalian, China.
[] May 2017 Toulouse conference on illposed inverse problem.
[] December 2016 International Conference on Data Science, Fudan University, China.
[] August 2016 BIRS Workshop on measurement errors, Banff, Canada.
[] Conference on Inverse Problems in Econometrics, Northwestern, Oct 2-3, 2015, Evanston, IL.
[] Big Data Big Method Conference, Cemmap/INET-Cambridge UK, Sept 29-30, 2015
[] International Conference on ``Frontiers of Theoretical Econometrics'' in celebration of Don Andrews's 60th birthday, Konstanz, August 1-2, 2015.
[] Enno Mammen's 60th birthday conference, Berlin, June 4-6, 2015.
[] NSF conference on ``Statistics for Complex Systems'' in Wisc, Madison, June 1-2, 2015.
[] Cemmap celebration conference, Nov.14-16, 2014
[] First Seattle-Vancouver Econometrics Conference, University of Washington, Seattle, September 13, 2014.
[] International Symposium on Recent Developments in Econometric Theory with Applications in honor of Jerry Hausman, June 23-24, 2014, WISE, Xiamen Univ., China.
[] Invited tutorial: Self-normalized Asymptotic Theory in Probability, Statistics and Econometrics, May 15, 2014, IMS/NUS, Singapore.
[] Invited speaker, HKUST IAS Workshop on Advances in Microeconometrics, May 23-24, 2014. Hong Kong.
[] Invited speaker in 2013 Metro-Atlanta Econometric Study Group (MAESG), November 22-23.
[] Invited speaker in Cemmap November 6-7, 2013.
[] Oberwolfach Workshop on Statistical Inference for Complex Time Series Data, September 22 – 28, 2013.
[] Invited speaker at 3rd Shanghai Econometrics Workshop, June 20-21, 2013, SUFE, Shanghai, China.
[] Invited speaker in 2012 Asian Meeting of the Econometric Society, Delhi, India, December 2012. (I was unable to attend due to illness).

[] ``Recent Developments in Econometrics'', Conference Celebrating the 65th Birthday of Jean-Pierre Florens, Toulouse, September 28-29, 2012.

[] Invited speaker, CEME conference on ``The Econometrics of Dynamic Games'', Stern School of Business (NYU), August 10-11, 2012.

[] Invited lectures on ``semi-nonparametric models and methods'', University of Tokyo, July 5-6, 2012.

[] IMS-APRM2012 meeting, July 2 – 4, 2012, Tsukuba, Japan.

[] ``Recent Developments in Microeconometrics'', Vanderbilt, March 23-24, 2012.

[] The Pre-Conference Workshop: 2011 Asian Meeting of the Econometric Soceity. Recent Developments in Econometrics and Empirical Economics. Seoul National University, August 10, 2011.

[] Recent Trends and Advances in Econometrics, July 10, 2011, Monash University.

[] Conference in honor of Professor Joel Horowitz 70th birthday, June 26-27, 2011, Cemmap, London

[] Applied Inverse Problems Conference, Texas A&M, May 23-27, 2011

[] Conference in honor of Professor Halbert White 60th birthday, May 6-7, 2011, UCSD

[] International Conference on Statistics and Society, July 10 – 12, 2010, Renmin University, Beijing

[] Celebration Conference for the 30th Anniversary of Summer Palace Workshop on Econometrics, July 10 – 11, 2010, Institute of Quantitative and Technical Economics /Chinese Academy of Social Sciences, Beijing.

[] Semiparametric Methods in Economics and Finance, June 21 - 22, 2010, LSE.

[] 2010 International Conference on Quantitative Methods in Business Applications, June 15 -16, 2010, GSM/Peking University.

[] Stats in the Chateau, Paris Summer School in Econometrics and Statistics, August 31 – Sept.4, 2009

[] SITE conference on semi/nonparametrics, July 30-31, 2009

[] Cowles Summer Conference on ``Dependence'', June 2009, Yale/USA.

[] Spectral and Cubature Methods in Finance and Econometrics, June 18 -20, 2009, University of Leicester, UK.

[] Cemmap / ESRC Econometric Study Group workshop on quantile regression, June 1-2, 2009

[] Semiparametric and Nonparametric Methods in Econometrics, BIRS Workshop 09w5032, April 5-10, 2009, Banff, Canada.

[] Oxford-Man Institute Symposium on Modelling Multivariate Dependence and Extremes in Finance, University of Oxford, Nov. 6-7, 2008 (Scientific committee member and speaker)

[] Conference in honor of Peter Phillips 60th Birthday, SMU, July 14-15, 2008.

[] Cowles Summer Conference on ``operator methods and inverse problems in econometrics'', June 2008, Yale/USA (co-organizer, speaker).

[] International conference on ``measuring dependence in economics and finance'', CASS, Dec. 8-9, 2007.

[] CIRANO and CIREQ Econometrics Conference on GMM, Montreal, November 16-17, 2007.

[] Harvard conference on copula, dependence and value at risk, Harvard, Nov., 8-9, 2007.

[] Conference in honor of Hansen-Singleton 1982 paper, CMU, Sept. 28-29, 2007.

[] Cemmap conference on measurement matters. IFS/London, June 28-30, 2007.
[] Conference in honor of Peter M. Robinson 60th Birthday, LSE, May 25-26, 2007.
[] Oberwolfach Workshop on Semiparametric and Nonparametric Methods in Econometrics, Germany, March 18-24, 2007.
[] Econometrics and Empirical Economics (EEE) Programme of the Econometric Society European Meetings (ESEM) 2006, Vienna, August 24-28.
[] International Symposium on Financial Engineering and Risk Management (FERM2007), Beijing/China.
[] International Symposium on Financial Engineering and Risk Management (FERM2006), Xiamen/China.
[] Workshop on Inverse Problems, Toulouse/France, October, 2005.
[] Isaac Newton Institute in Cambridge on Developments in Quantitative Finance, June 13-17, 2005.
[] CIRANO and CIREQ Financial Econometrics Conference, Montreal, May 2005.
[] The 55th International Statistical Institute Conference, Sydney Australia, April 2005.
[] ``Semi-parametric Methods for Survival and Longitudinal Data'' Conference, March 18-24, 2005, Institute for Mathematical Studies, Singapore.
[] CIRANO and CIREQ Econometrics Conference, Montreal, November 2004.
[] ``Semiparametrics in Rio'', July 2004.
[] ``Predictive methodology and application in economics and finance'' Conference in honor of Clive Granger, Jan. 6-7, 2004, San Diego.
[] Workshop on inverse problem in econometrics, Nov. 2003, Cemmap, UCL/UK.
[] 2003 NBER Summer Institute, Forecasting and Empirical Methods in Macroeconomics and Finance.
[] 2003 NBER/NSF Time Series Conference, Chicago, Sept. 19 – 20 *(invited discussant)*
[] CIRANO and CIREQ Financial Econometrics Conference, Montreal, May 2003.
[] Almost2, mathematical multivariate fast computing conference, Berlin, Sept. 2002.
[] CIRANO Conference on Multivariate Financial Econometrics, Montreal, May 2002.
[] Nonlinear and Long Memory Time Series Conference, Cardiff, UK, July 2000.
[] 2000 European Winter Econometric Society Meetings, London.
[] Yale Cowles Foundation time series conference, October 1999.
[] Paris–Berlin conference on financial mathematics and adaptive estimation, September 1998, Garchy, France.
[] NBER/NSF Conference of Econometrics and Mathematical Economics (CEME), Pittsburgh, October 1998.
[] 1998 North American Summer Econometric Society Meetings, Montreal.
[] International Conference on Dependence in Probability, Statistics and Number Theory: in honor of Walter Philipp 60th Birthday, Illinois at Champaign, May 1997.
[] 1996 North American Summer Econometric Society Meetings, Evanston.
[] Workshop on Learning in European University Institute, Florence, July 1995.
[] NBER/NSF Conference of Econometrics and Mathematical Economics (CEME), Wisconsin, June 1995.
[] Stanford SITE Summer Conference, July 1994.


**Conference Presentation and/or Participation:**

[] Cowles Summer conference on networks, June 6-7, 2017, co-organizer.
[] Shanghai Econometrics Workshop, co-organizer, June, 2014, 2017, SUFE, Shanghai, China.
[] Cowles Summer Conference, June, 2013, 2014, 2015 (by coauthor).
[] Cowles Summer Conference on ``some advances in econometrics'', June 11-12, 2012, Yale/USA (organizer).
[] Junior Festival on New Developments in Microeconometrics, March 2-3, 2012, Noethwestern.
[] SUFE Conference in Honor of T. Amemiya. August 2010, Shanghai, China. (co-organizer).
[] Cowles 75$^{th}$ Anniversary Conference, June 2007, Yale/USA.
[] 2006 Far Eastern Meeting of the Econometric Society, Beijing/China
[] 2006 International Conference on Econometrics, July 14, Shanghai/China, co-organizer.
[] 2006 Chinese Economists Society Annual Conference, July 2-4$^{th}$, Shanghai/China
[] Econometric Society 9$^{th}$ World Congress in London, August 2005
[] NBER/NSF Conference of Econometrics and Mathematical Economics (CEME), MIT, March 2005
[] Midwest Econometrics Study Group Conference, Oct. 2004, Northwestern.
[] Society for Economic Dynamics (SED) Annual Meeting, Florence, July 2004
[] Dependence Modelling: Statistical Theory and Applications in Finance and Insurance (DeMoSTAFI), Quebec City, May 2004
[] CIRANO and CIREQ Financial Econometrics Conference, Montreal, May 2004 (paper presented by co-author)
[] NBER Asset Pricing Program Meeting, Chicago, April 2004 (paper presented by co-author)
[] 2003 North American Summer Econometric Society Meetings, Northwestern, June.
[] Third International Conference on Constructive Approximation, Nashville, May 2003
[] 1995 - 2006 North American Winter Econometric Society Meetings.
[] NBER/NSF Time Series Conference, UPenn, Sept. 2002
[] Workshop on Financial Mathematics and Econometrics, Montreal, June 2001 (*invited*).
[] NBER/NSF Conference of Econometrics and Mathematical Economics (CEME), Rochester, March 2001 (*invited*).
[] Workshop on Empirical Processes with Dependent Data, Copenhagen, November 2000
[] NBER/NSF Time Series Conference, Colorado, Sept. 2000
[] Econometric Society 8$^{th}$ World Congress in Seattle, August 2000.
[] UK Annual Econometrics Meetings, Bristol, July 2000, 2001.
[] NBER/NSF Time Series Conference, University of Chicago, August 1998.
[] NBER/NSF Time Series Conference, Duke University, October 1997.
[] Workshop on Nonparametrics, Montreal, October 1997.
[] North American Statistical Annual Meetings, June 1996 (Chicago), August 2002 (New York, *invited discussant*)
[] NBER/NSF Time Series Conference, Texas A&M, March 1996. (*invited*).
[] Midwest Econometrics Study Group Meeting, Wisconsin, October 1996.
[] Econometric Society 7$^{th}$ World Congress in Tokyo, August 1995.

[] NSF Statistics-Econometrics Conference, Yale, December 1994. (*invited*).


**Seminar Presentations:**

Past: Chicago, Chicago/Statistics, Princeton, MIT/Harvard, Yale, Penn, Northwestern, Wisconsin-Madison, Queen's, Texas A&M, Texas Austin, UIUC, Penn State, Maryland, Ohio State, York, Windsor, Guelph, UCB, UCSD, UCLA, UCR, USC, CREST/Paris, Toulouse/France, LSE, Toronto, Western Ontario, Rutgers, Indiana/Bloomington, Kansas, Virginia, Warwick, Universidad Carlos III, Oxford, Copenhagen, CORE, Montreal, ECARES-ULB, Pittsburgh, NYU, Stanford, Mich, Rice, Brown.
2003: Yale/Statistics, Virginia, Rochester, UCLA
2004: Harvard/MIT, Stanford, Caltech, Berkeley, UCR, Wisc., Duke, UPenn, Columbia, Maryland
2005: Northwestern, Duke, Singapore Management University, UCSD, Brown, Humboldt University at Berlin, UCL, LSE, Yale
2006/07: Penn State, LSE, Yale, City University of London, IFS/UCL, University of Frankfurt, Mannheim University, Heidelberg University, Indiana, Vanderbilt, Toulouse, Northwestern, Boston College, Boston University.
2008: Montreal, Rutgers, Maryland, Georgetown, Virginia, Adelaide/Australia, UCLA, UCSD, NYU, Columbia
2009: Harvard/MIT, UC Berkeley, UCL/Cemmap, Seoul National University.
2010: Purdue/Stat, UPenn.
2011: CEMFI/Madrid, UCSD, NYU, Weierstrass Institute/Berlin, Chicago, BC, Toronto, UCLA, UC Berkeley, Stanford.
2012: Carols III-CEMFI, Arizona, Princeton, Penn State, UCL, Cambridge/UK, Duke, Brown, University of Tokyo, Montreal.
2013/14: NYU, Princeton, Texas Austin, Texas A&M, Harvard/MIT
2014/15: NYU, John Hopkins, Univ. of Washington, Seattle.
2015/16: NYU, Columbia, Princeton, Cornell, Stanford, Wuhan Univ./China
2016/17: Brown, Columbia, Penn State, Princeton.


**Supervision of PhD Students' Dissertations:**

Sept. 1993 – June 1999 at University of Chicago, I have served as a member of dissertation committee for 9 previous PhD students from Chicago:
  (1) Shih-hao Luo (consultant in a bank, applied microeconomics).
  (2) Zeling Ge (consultant in a bank, applied microeconomics).
  (3) Guoqing Song (associate professor in Beijing University, applied macroeconomics).
  (4) Marcelo Navarro (consultant in Goldman Sachs, financial econometrics).
  (5) Chonlathan Visaruthvong (Bank of Thailand, applied microeconomics).
  (6) Richard Co (Chicago trade center, financial econometrics).
  (7) Kevin Wang (first job: assistant professor at Toronto, financial econometrics).
  (8) Guillermo Moloche (first job: postdoc at MIT, financial econometrics).
  (9) Edward Vytlacil  (first job: assistant professor at Stanford, microeconometrics).

July 1999 – August 2001 at London School of Economics, UK, I have helped Professor Oliver Linton in the supervision of one previous PhD student:

Dennis Kristensen (first job: assistant professor at Wisconsin).

July 2002 – July 2011 at New York University, I have served as a supervisor and/or a member of dissertation committee for several previous and current PhD students from NYU:

  (1) Riccardo Colacito (first job: assistant professor at UNC).
  (2) Syngjoo Choi (first job: assistant professor at UCL/UK).
  (3) Demian Pouzo (first job: assistant professor at UC Berkeley, currently tenured at UC Berkeley). Co-supervisor.
  (4) Peng Wang (tenured associate professor at Hong Kong Science and Technology)
  (5) Yanping Yi (associate professor at Shanghai University of Finance and Economics), Supervisor.
  (6) Jau-er Chen (first job: assistant professor at National Taiwan University).

July 2007 – present at Yale University, I have served as a supervisor and/or a member of dissertation committee for several previous and current PhD students from Yale:

 (1) Xu Cheng (first job: assistant professor at UPenn, currently tenured at UPenn).
 (2) Xiaoxia Shi (first job: assistant professor at Wisc., currently associate at Wisc).
 (3) Kirill Evdokimov (first job: assistant professor at Princeton).
 (4) Zhipeng Liao (first job: assistant professor at UCLA, currently tenured at UCLA), Co-supervisor.
 (5) Alex Torgovitsky (first job: assistant professor at Northwestern, currently at Univ of Chicago), Co-supervisor.
 (6) James Wolter (first job: three-year postdoc, lecturer at Oxford), Co-supervisor.
 (7) Irene Botosaru (first job: assistant professor at Toulouse, current: Warwick UK).
 (8) Wei Dou (PhD in Yale/Statistics 2010, currently an assistant professsot at Wharton Finance).
 (9) Sukjin Han (first job: assistant professor at Texas Austin).
 (10) Eduardo Souzarodrigues (first job: Harvard postdoc, assistant professor at U Toronto).
 (11) Jihyung Lee (first job: assistant professor at Univ of Washington, Seattle; current: UIUC)
 (12) James Duffy (first job: three-year postdoc, lecturer at Oxford), Co-supervisor.
 (13) Tim Christensen (first job: assistant professor at NYU), Co-supervisor.
 (14) David Childers (first job: CMU)
 (15) Zhiran Wang (master student)
 (16) Stefan Schneeberger (first job: The Boston Consulting Group, Vienna office)
 (17) Gregory Cox (first job: assistant professor at Columbia Univ.)
 (18) Gil DePaula (was a PhD student at School of Forestry, first job: assistant professor at Dept of Economics, Iowa State Univ.)
 (19) Giovanni Compiani (first job: UC Berkeley, Hass School of Business)
 (20) Wayne Yuan Gao (firs job: UPenn), Co-supervisor
 (21) Louise Laage (first job: Georgetown Univ.)

(22)   Soonwoo Kwon

I have also advised the senior essays of the following Yale BA/MA Economics students:
    (1) Steven Li (Yale Class of 2010).
    (2) Mansur Tokmouline (Yale Class of 2011). Winner of the Ellington Prize for an outstanding senior essay in the field of finance.
    (3) Scott Eisner (Yale Class of 2014).
    (4) Leon Zhang (Yale Class of 2014, I advised his senior project in applied math and statistics).
    (5) Alex Garland (Yale Class of 2017).

In addition, I have helped two previous non-NYU/Yale PhD students with their thesis chapters:
  (1) Aprajit Mahajan (was a student at Princeton, first job: assistant professor at Stanford, microeconometrics).
  (2) Stefania D'Amico (was a student at Columbia, first job: Board of Governor, macroeconometrics).