Christian Brownlees

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Personal Data

Born in 1979 in Florence (Italy). British and Italian Citizen.

Research Interests

Statistics and Econometrics, Empirical Finance, Statistical Computing, Quantitative Finance, Network Analysis, Systemic Risk.

Academic and Visiting Positions

Visiting Scholar — 2015
Department of Economics, European University Institute — Florence, Italy

Fernand Braudel Scholar — 2014
Department of Economics, European University Institute — Florence, Italy

Assistant Professor — 2011–
Department of Economics and Business, Universitat Pompeu Fabra — Barcelona, Spain

Post-Doc Research Fellow — 2008-2011
Department of Finance, Stern School of Business, NYU — New York, USA
Supervisor: Robert Engle

Visting Scholar — 2007–2008
Department of Finance, Stern School of Business, NYU — New York, USA
Sponsor: Robert Engle

Research Fellow — 2007-2008
Department of Statistics, University of Florence — Florence, Italy

Visiting Scholar — 2006
Department of Economics, UCSD — San Diego, USA
Sponsor: Hal White

Research Fellow — 2003
Department of Statistics, University of Florence — Florence, Italy

Affiliations

Affiliated Professor — 2011–
Barcelona Graduate School of Economics — Barcelona, Spain

Affiliated Researcher — 2011–
Volatility Institute, Stern School of Business, NYU — New York, USA

Education

Doctorate in Applied Statistics — 2007
Department of Statistics, University of Florence — Florence, Italy
Thesis: "Essays in Parameter Reduction Techniques for Nonlinear Time Series Models"

B.S. in Economics and Quantitative Methods — 2003
Department of Statistics, University of Florence — Florence, Italy
Thesis: "The impact of overnight innovation on intra-daily volatility: a high frequency approach" *summa cum laude*

Articles

1. "SRISK: A Conditional Capital Shortfall Measure of Systemic Risk" with Robert Engle, *The Review of Financial Studies*, 2016, doi:10.1093/rfs/hhw060
2. "Empirical Risk Minimization for Heavy–Tailed Losses" with Emilien Joly and Gabor Lugosi, *Annals of Statistics*, 2015, 43(6), 2507–2536, doi:10.1214/15-AOS1350
3. "Disentangling Systematic and Idiosyncratic Dynamics in Panels of Volatility Measures" with Matteo Barigozzi, Giampiero M. Gallo and David Veredas; *Journal of Econometrics*, 2014, 182(2), 364-382, doi:10.1016/j.jeconom.2014.05.017
4. "A Bayesian Approach for Capturing Daily Heterogeneity in Intra-Daily Durations Time Series: the Mixed Autoregressive Conditional Duration Model" with Marina Vannucci; *Studies in Nonlinear Dynamics & Econometrics*, 2013, 17(1), 21-46, doi:10.1515/snde-2012-0043
5. "A Practical Guide to Volatility Forecasting Through Calm and Storm" with Robert Engle and Bryan Kelly; *Journal of Risk*, 2011, 14(2), 1-20
6. "Intra-daily Volume Modeling and Prediction for Algorithmic Trading" with Fabrizio Cipollini and Giampiero M. Gallo; *Journal of Financial Econometrics*, 2011, 9(3) 489-518, doi:10.1093/jjfinec/nbq024
7. "Shrinkage Estimation of Semi-Parametric Multiplicative Error Models" with Giampiero M. Gallo; *International Journal of Forecasting*, 2011, 27(1) 365-378, doi:10.1016/j.ijforecast.2010.04.005
8. "Comparison of Volatility Measures: A Risk Management Perspective" with Giampiero M. Gallo; *Journal of Financial Econometrics* 2010, 8(1) 29-56, doi:10.1093/jjfinec/nbp009
9. "On Variable Selection for Volatility Forecasting: The Role of Focused Selection Criteria" with Giampiero M. Gallo; *Journal of Financial Econometrics* 2008, 6(4) 513-539, doi:10.1093/jjfinec/nbn012
10. "Financial econometric analysis at ultra–high frequency: Data handling concerns" with Giampiero M. Gallo; *Computational Statistics & Data Analysis* 2006, 51(4) 2232-2245, doi:10.1016/j.csda.2006.09.030

Book Chapters

1. "Measuring Systemic Risk" with Viral Acharya, Robert Engle, Farhang Farazmand and Matthew Richardson in "Regulating Wall Street: The Dodd-Frank Act and the New Architecture of Global Finance" Viral A. Acharya, Thomas F. Cooley, Matthew P. Richardson and Ingo Walter, editors Wiley 2010
2. "Multiplicative Error Models" with Giampiero Gallo and Fabrizio Cipollini in "Handbook in Financial Engineering and Econometrics: Volatility Models and Their Applications" L. Bauwens, C. Hafner and S. Laurent, editors Wiley 2012

Conference Proceedings

1. "Financial Risk Management Via Multi Model Inference Grid Applications" with Simone Contini, Riccardo Di Meo and Valerio Sullo; Proceedings of the "Grid Technology for Financial Modelling and Simulation" conference, 3-4 February 2006, Palermo, Italy

Working Papers

1. "How Interdependent are Systemic Risk Indicators? A Network Analysis" with Daniele Frison
2. "Bank Credit Risk Networks: Evidence from the Eurozone" with Christina Hans and Eulalia Nualart
3. "Realized Networks" with Eulalia Nualart and Yucheng Sun
4. "NETS: Network Estimation for Time Series" with Matteo Barigozzi
5. "Hierarchical GARCH"

Seminar and Conference Presentations

2016
Seminar at the Department of Economics, Adam Smith Business School (Glasgow, February 10, 2016); Seminar at the Bank of International Settlements (Basel, March 4, 2016); Seminar at the Scuola Normale Superiore (Pisa, March 11, 2016); Seminar at Bilken University (Ankara, April 15, 2016); Seminar at University of Zurich (Zurich, April 29, 2016); "Barcelona GSE Summer Forum on Time Series Analysis in Macro and Finance workshop" (Barcelona, June 20–21, 2016);

2015
Seminar at the CRM (Barcelona, January 15, 2015); "7th Hedge Fund Research Conference" (Paris, 22–23, January, 2015); Seminar at Banca D'Italia (Rome, April 9, 2015); "Econometric Workshop" at European University Institute (invited talk)(Florence, 30, April, 2015); "Workshop on Tail Event Driven Risk Modelling" at Cambridge University (invited talk) (Cambridge, 5–6, May, 2015); "High Dimensional Time Series in Macroeconomics and Finance" conference at IHS (Vienna, May 21–22, 2015); "New Frontiers in Systemic Risk Measures and Extreme Risk Management" conference at CUNY (invited talk) (New York, June 4, 2015) "Barcelona GSE Summer Forum on High Frequency Financial Econometrics" (Barcelona, June 11–12, 2015); "The Society for Financial Econometrics Eigth Conference" (Aarhus, June 23–25, 2015); Seminar at the Department of Finance, Accounting and Statistics of the University of Vienna (Vienna, November 13, 2015); 2015 International Dauphine-ESSEC-SMU Conference on Systemic Risk (invited talk) (Singapore, December 11–12, 2015); "9th International Workshop on Computational and Financial Econometrics" (London, December 12–14, 2015)

2014
"ECB workshop on using big data for forecasting and statistics" at the ECB (Frankfurt, April 7–8, 2014); Seminar at the Department of Economics of EUI (Florence, April 11, 2014); Seminar at the Department of Economics of University of St. Gallen (St. Gallen, April 28, 2014); Seminar at the Department of Economics of Ca Foscari University (Venice, May 12, 2014); Seminar at the Department of Economics of La Sapienza University (Rome, May 20, 2014) "Barcelona GSE Summer Forum on Time Series Analysis in Macro and Finance workshop" (Barcelona, June 19–20, 2014); Seminar at the Department of Econometrics of Erasmus School of Economics (Rotterdam, September 18, 2014); "Monitoring Systemic Risk: Data, Models and Metrics" workshop at the Isaac Newton Institute (invited talk) (Cambridge, September 22–26, 2014); "Financial Risk & Network Theory" workshop at the Judge Business School (Cambridge, September 13, 2014); Joint CFS, ECB and Deutsche Bundesbank Seminar at the ECB (Frankfurt, November 5, 2014); "Systemic Risk and Contagion" conference at the University of Bologna (Bologna, November 6-7, 2014); Seminar at the Tinbergen Institute (Amsterdam, November 28, 2014); Seminar at the Banque De France (Paris, December 9, 2014); "Greek Stochastics ζ" (invited talk) (Athens, Greece, December 20-22)

2013
"ICEEE 2013" conference at the University of Genova (Genova, January 16–18, 2013); Seminar at the Bundesbank (Frankfurt, February 12, 2013); Seminar at the Department of Statistics of the London School of Economics (London, March 1, 2013); "3rd Humboldt–Copenhagen Conference on Financial Econometrics" at Humboldt University (Berlin, March 16–18, 2013); Seminar at IAE/UAB (Barcelona, April 17, 2013); "High Dimensional Time Series in Macroeconomics and Finance" conference at IHS (Vienna, May 2–4, 2013); "Financial Econometrics Conference" at the Toulouse School of Economics (Toulouse, May 17–18, 2013); "Barcelona GSE Summer Forum on Time Series Analysis in Macro and Finance workshop" (Barcelona, June 10–11, 2013); "EUI Measuring and Modeling Financial Risk with High Frequency Data workshop" (invited talk) (Florence, June 27–29, 2013); "2013 NBER-NSF Time Series Conference" at the Federal Reserve Board (Washington, September 26–27, 2013); Seminar at the Department of Economics of Koç University (Instanbul, October, 2, 2013); Seminar at IHS (Vienna, November, 28, 2013)

2012
"4th Hedge Fund Conference" conference at the Paris Bourse (Paris, January 26–27, 2012); Seminar at CREATES (Aarhus, Februray 23, 2012); Seminar at the Economics and Finance Department of Queen Mary University (London, March 19, 2012); Seminar at CREIP at Universitat Rovira i Virgili (Reus, March 27, 2012); Seminar at the Department of Economics of University College of London (London, May 8, 2012); Seminar at CEMFI seminar (Madrid, June 4, 2012); Seminar at the Department of Economics of University of Konstanz (Konstanz, July 11, 2012); "Recent Developments in Econometrics" conference at Universitat Rovira i Virgili (invited talk) (Reus, October 26, 2012); UPF Finance Lunch Seminar (Barcelona, November 9, 2012); "New Tools for Financial Regulation" conference at Banque de France (Paris, November 15–16, 2012); CORE–ECORE/LSM Seminar at the Universitè catholique de Louvain (Louvain, December 17, 2012)

2011
"Second Humboldt–Copenhagen Conference" at University of Copenhagen (Copenhagen, May 13–14, 2011); "SITE Summer 2011 Workshop: Measuring and Modeling Risk with High Frequency Data" (invited talk) (Stanford, June 21–20, 2011); "The Society for Financial Econometrics Fourth Conference" at the University of Chicago (Chicago, June 15–17, 2011); Quantitative Seminar at Barclays Capital New York (New York, March 29, 2011)

2010
"Goldman Sachs GSET Strategists Weekly" seminar at Goldman Sachs (New Jersey, January 19, 2010); Econometrics seminar at ECARES at ULB (Brussels, March 18, 2010); "Fourth CIREQ Time Series Conference" at the University of Montréal (May 14-15, 2010) (Montréal, poster presentation); "The Society for Financial Econometrics Third Conference" at the University of Melbourne, (Melbourne, June 16–18, 2010); ULB School of Economics and Management Brussels seminar (Brussels, September 27, 2010); "Credit Risk, Systemic Risk, and Large Portfolios" conference, University of Venice (Venice, September 30 – October 1, 2010); Finance Seminar at the Department of Finance at New York University seminar, (New York, October 25, 2010)

2009
"Volatilities and Correlations in Stressed Markets" conference at New York University (New York, April 3, 2009); Econometrics seminar at the Department of Economics at Columbia University (New York, 30 April, 2009); "The Society for Financial Econometrics Second Conference" at the University of Geneva (Geneva, June 16–18, 2009); "20th $(EC)^2$ Conference - Real Time Econometrics" conference at the University of Aarhus (Aarhus, December 18–19 2009)

2008
"Greater NY Metropolitan Area Econometrics Colloquium" at Princeton University (Princeton, December 6, 2008); "Humboldt-Copenhagen Conference" at Humboldt University (Berlin, March 20-21, 2009); "The Society for Financial Econometrics Inaugural Conference" at New York University (New York, June 4–6, 2008)

2007
Statistics Seminar at the Department of Statistics of Rice University (Houston, November 12, 2007); Quantitative Finance Seminar at the Department of Finance of New York University (New York, December 10,

2007); "International Workshop on Computational and Financial Econometrics" conference at the University of Geneva (Geneva, April 20-22, 2007)

2005
"Complex Systems and Statistical Computing" conference at the University of Padova (Padova, September 15–17, 2005);

2004
"Metodi Matematici e Statistici per le Assicurazioni e la Finanza" conference at the University of Salerno (Salerno, April 15–16, 2004); "19th International Workshop on Statistical Modeling" conference at the University of Florence (Florence, July 4–8 2004) (poster)

2003
"Australasian Meeting of the Econometrics Society" conference at the University of New South Wales (Sidney, July 9–11, 2003)

Referee Activity

American Economic Journal: Economic Policy, American Economic Review, Computational Statistics & Data Analysis, Journal of Applied Econometrics, Journal of Banking and Finance, Journal of Business Economics and Statistics, Journal of Econometrics, Journal of Economic Dynamics and Control, Journal of Empirical Finance, Journal of Empirical Legal Studies, Journal of Financial and Quantitative Analysis, Journal of Financial Econometrics, Journal of Financial Intermediation, Journal of Financial Stability, Journal of Machine Learning Research, Journal of the American Statistical Association, Journal of the Royal Statistical Society (Series A), Macroeconomic Dynamics, Management Science, Quantitative Finance, Review of Asset Pricing Studies, Review of Economics and Statistics, Review of Economic Studies, Review of Financial Studies.

Editorial Activity

Associate Editor for the Journal of Risk and Financial Management (2014–), Annals of Financial Economics (2014–), Econometrics (2014–), Journal of Network Theory in Finance (2014–).

Teaching Experience

Advanced Courses

"Econometric Analysis of Networks", CIdE Summer School in Econometrics 2014

"Econometric Analysis of Networks", Master in Quantitative Finace, University of Bologna

Executive

"Systemic Risk Measurement", Barcelona Graduate School of Economics course on Systemic Risk and Prudential Policy, 2012–.

Graduate

"Computing Lab" (in English), Barcelona Graduate School of Economics, 2014–.

"Financial Econometrics" (in English), Barcelona Graduate School of Economics, 2011–.

"Trading and Financial Markets" (in English), Barcelona Graduate School of Economics, 2012–2014.

"Volatility Modeling", CIdE Summer School in Econometrics (in Italian until 2009 then English), 2007–2010, 2012.

Undergraduate

"Forecasting Techniques" (in English), Universitat Pompeu Fabra, 2014–.

"Probability & Statistics" (in English), Universitat Pompeu Fabra, 2011–2014.

"Applied Statistics with R", University of Florence, 2007.

"Statistics" (in English), Fashion Institute of Technology, 2003.

Conferences & Workshops Organization

Barcelona GSE Summer Forum on Time Series Analysis in Macro and Finance, Barcelona, Spain, June 10–11, 2014

Barcelona GSE Summer Forum on Time Series Analysis in Macro and Finance, Barcelona, Spain, June 10–11, 2013

Barcelona Workshop on Networks in Finance, Barcelona, Universitat Pompeu Fabra, Barcelona, Spain, May 3, 2012

Conference Scientific Committees

Third International Association of Applied Econometrics Conference, Milan, Italy, June 22-25, 2016

Eigth Annual SoFiE Conference, CREATES at Aarhus University, Aarhus, Denmark, June 24-26, 2015

High Dimensional Time Series in Macroeconomics and Finance, Vienna, IHS, May 21-22, 2015

Systemic Risk and Financial Regulation, Banque de France, Paris, July 3-4, 2014

Seventh Annual SoFiE Conference, Rotman School of Management and the Global Risk Institute, Toronto, Canada, June 11-13, 2014

Sixth Annual SoFiE Conference, Sim Kee Boon Institute for Financial Econometrics, Singapore, June 12-14, 2013

Marie Curie Risk ITN - Risk Management and Risk Reporting, University of Konstanz, Konstanz, Germany April 11-12, 2013

Fifth Annual SoFiE Conference, Saïd Business School, Oxford, UK, June 20-22, 2012

Ph. D. Committees

Humboldt-Universität zu Berlin, 2012

European University Institute, 2015

Scientific Software Projects

`Vlab` (2008-2011): One of my assignments as Post-Doc of the Finance Department at Stern was the development of the Volatility Laboratory software. The Volatility Laboratory (Vlab) provides real time measurement, modeling and forecasting of financial volatility and correlations for a wide spectrum of assets. The project blends together both classic models as well as some of the latest advances proposed in the financial econometrics literature. The aim of the laboratory is to provide real time evidence on market dynamics for both researchers and practitioners. The vlab allows one to access statistics and graphs about volatility and correlations through a Web content management system. Starting from April 2010 the vlab also provides a variety of risk measures for top US financial firms and rankings of the most systemically risky firms. The aim of this project is to provide regulators and market participants tools for understanding and monitoring systemic risk in real time. The latest version of the vlab can be viewed at the URL `http://vlab.stern.nyu.edu`.

Awards, Fellowship and Scholarships

Beatriu de Pinós Fellowship, 2013

EUI Fernand Braudel Senior Fellowship, 2013

Engle Prize in Financial Econometrics, 2013
for the paper "Comparison of volatility measures: a risk management perspective"

Second placement for best Italian Applied Statistics PhD dissertation, 2007-2008.

University of Florence Scholarship for the Doctorate program in Applied Statistics, 2004

"Villa Favard" Award for most original thesis of the Florence School of Economics, 2003

Italian Trade Commission Study Abroad Scholarship (Monash University, Australia), 2002

Erasmus Study Abroad Scholarship (University of Reading, UK), 2000