Christian Brownlees

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Personal Data

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

Research Interests

Time Series, Statistics, Econometrics, Empirical Finance, Statistical Computing

Affiliations, Academic and Visiting Positions (longer than a month)

Associate Research Professor Barcelona Graduate School of Economics	2017– Barcelona, Spain
Assiociate Professor Department of Economics and Business, Universitat Pompeu Fabra	2017– Barcelona, Spain
Visiting Scholar Department of Economics, European University Institute	2015 Florence, Italy
Fernand Braudel Scholar Department of Economics, European University Institute	2014 Florence, Italy
Affiliated Professor Barcelona Graduate School of Economics	2011– Barcelona, Spain
Assistant Professor Department of Economics and Business, Universitat Pompeu Fabra	2011–2017 Barcelona, Spain
Post-Doc Research Fellow Department of Finance, Stern School of Business, NYU Supervisor: Robert Engle	2008–2011 New York, USA
Visting Scholar Department of Finance, Stern School of Business, NYU Sponsor: Robert Engle	2007–2008 New York, USA
Research Fellow Department of Statistics, University of Florence	2007–2008 Florence, Italy
Visiting Scholar Department of Economics, UCSD Sponsor: Hal White	2006 San Diego, USA
Research Fellow Department of Statistics, University of Florence	2003 Florence, Italy

Education

Doctorate in Applied Statistics — 2007
Department of Statistics, University of Florence — Florence, Italy
"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
"The impact of overnight innovation on intra-daily volatility: a high frequency approach" *summa cum laude*

Articles

1. "Credit Risk Interconnectedness: What Does the Market Really Know?" with Puriya Abbassi, Christina Hans and Natalia Podlich, *Journal of Financial Stability*, forthcoming doi:10.1016/j.jfs.2017.01.002

2. "SRISK: A Conditional Capital Shortfall Measure of Systemic Risk" with Robert Engle, *The Review of Financial Studies*, 2017, 30(1), 48-79, doi:10.1093/rfs/hhw060

3. "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

4. "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

5. "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

6. "A Practical Guide to Volatility Forecasting Through Calm and Storm" with Robert Engle and Bryan Kelly; *Journal of Risk*, 2011, 14(2), 1-20

7. "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

8. "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

9. "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

10. "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

11. "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. "Back to the Future: Backtesting Systemic Risk Measures During Historical Bank Runs and the Great Depression"
   with Ben Chabot, Eric Ghysels and Christopher Kurz
   Revise and Resubmit Review of Financial Studies
2. "Hierarchical GARCH"
   Revise and Resubmit Journal of Empirical Finance
3. "Realized Networks"
   with Eulalia Nualart and Yucheng Sun
   Revise and Resubmit Journal of Applied Econometrics
4. "Impulse Response Estimation By Smooth Local Projections"
   with Regis Barnichon
   Revise and Resubmit Review of Economics and Statistics
5. "NETS: Network Estimation for Time Series"
   with Matteo Barigozzi
   Revise and Resubmit Journal of Applied Econometrics
6. "Community Detection in Partial Correlation Network Models"
   with Gudmundur Stefan Gudmundsson and Gabor Lugosi
7. "Detecting Granular Time Series in Large Panels"
   with Geert Mesters
8. "On the Consequences of Power-Law Behavior in Partial Correlation Network Models"
   with Matteo Barigozzi and Gabor Lugosi
9. "A Truncated Two-Scales Realized Volatility Estimator"
   with Eulalia Nualart and Yucheng Sun

Seminar and Conference Presentations (since 2011)

2017
Seminar at the Department of Economics, University of Southampton (Southampton, February 8, 2016); seminar at CREST (Paris, February 23, 2017); presentation at the "Vienna-Copenhagen Conference on Financial Econometrics" (Vienna, March 9-11, 2017); presentation at the "Workshop in Time Series Econometrics" (invited talk) (Zaragoza, March 30-31, 2017); seminar at the Deparment of Economics, Université Laval (Quebec City, April 7, 2017); seminar at the Department of Economics University of Mannheim (Mannheim, April 25, 2017); seminar at the Department of Economics Université Paris-Dauphine (Paris, May 4, 201); presentation at the "Financial Econometrics" conference (invited talk) (Toulouse, May 12-13); presentation at the "Big Data in Dynamic Predictive Econometric Modeling" conference (Philadelphia, May 18-19, 2017); seminar at the Department of Economics University of Orleans (Orleans, May 25, 2017); presentation at the "Workshop on High-Dimensional Time-Series in Economics and Finance" (Vienna, 8-9 June, 2017); presentation at the "Financial Econometrics" conference (invited talk) (Chengdu, 16 June, 2017) presentation at the "Third International Workshop in Financial Econometrics" conference (invited talk) (Porto Seguro, October 8–10, 2017)

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 Bilkent University (Ankara, April 15, 2016); seminar at University of Zurich (Zurich, April 29, 2016); presentation at the "Barcelona GSE Summer Forum on Time Series Analysis in Macro and Finance" conference (Barcelona, June 20–21, 2016); seminar at the CORE–ECORE/LSM/Universitè catholique de Louvain (Louvain, Novemer 25, 2016); presentation at the "19th Applied Time Series Econometrics Workshop" at the Federal Reserve Bank of St. Louis (invited talk) (St. Louis, September 30, 2016); presentation at the "CFE 2016" conference (Seville, December 9–11, 2016);

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

2014
presentation at the "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) presentation at the "Barcelona GSE Summer Forum on Time Series Analysis in Macro and Finance" conference (Barcelona, June 19–20, 2014); seminar at the Department of Econometrics of Erasmus School of Economics (Rotterdam, September 18, 2014); presentation at the "Monitoring Systemic Risk: Data, Models and Metrics" workshop at the Isaac Newton Institute (invited talk) (Cambridge, September 22–26, 2014); presentation at the "Financial Risk & Network Theory" workshop at the Judge Business School (Cambridge, September 13, 2014); semnar at the CFS/ECB/Deutsche Bundesbank (Frankfurt, November 5, 2014); presentation at the "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); presentation at the "Greek Stochastics ζ" (invited talk) (Athens, Greece, December 20-22)

2013
presentation at the "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); presentation at the "3rd Humboldt–Copenhagen Conference on Financial Econometrics" at Humboldt University (Berlin, March 16–18, 2013); seminar at IAE/UAB (Barcelona, April 17, 2013); presentation at the "High Dimensional Time Series in Macroeconomics and Finance" conference at IHS (Vienna, May 2–4, 2013); presentation at the "Financial Econometrics Conference" at the Toulouse School of Economics (Toulouse, May 17–18, 2013); presentation at the "Barcelona GSE Summer Forum on Time Series Analysis in Macro and Finance" conference (Barcelona, June 10–11, 2013); presentation at the "EUI Measuring and Modeling Financial Risk with High Frequency Data workshop" (invited talk) (Florence, June 27–29, 2013); presentation at the "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
presentation at the "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); presentation at the "Recent Developments in Econometrics" conference at Universitat Rovira i Virgili (invited talk) (Reus, October 26, 2012); UPF Finance Lunch Seminar (Barcelona, November 9, 2012); presentation at the "New Tools for Financial Regulation" conference at Banque de France (Paris, November 15–16, 2012); seminar at CORE–ECORE/LSM/Universitè catholique de Louvain (Louvain, December 17, 2012)

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

Referee Activity

American Economic Journal: Economic Policy, American Economic Review, Annals of Statistics, Computational Statistics & Data Analysis, Econometrica, 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 Finance, 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

Summer Schools
"Systemic Risk Measurement", RSSIA 2017, Moscow 2017
"Econometric Methods for Financial Time Series", Barcelona GSE Summer School in Macroeconometrics, Barcelona 2017
"Econometric Analysis of Networks", CIdE Summer School in Econometrics, Perugia 2014
"Volatility Modeling", CIdE Summer School in Econometrics, Bertinoro 2007–2010 and 2012.

Executive
"Systemic Risk Measurement", Barcelona GSE course on Systemic Risk and Prudential Policy, Barcelona 2012–2015.

Graduate
"Computing Lab" (Master in Data Science), Barcelona GSE, Barcelona 2014–2016.
"Financial Econometrics" (Master in Finance/Master in Data Science), Barcelona GSE, Barcelona 2011–
"Trading and Financial Markets" (Master in Finance), Barcelona GSE, Barcelona 2012–2014.

Undergraduate
"Forecasting Techniques", Universitat Pompeu Fabra, Barcelona 2014–
"Probability & Statistics", Universitat Pompeu Fabra, Barcelona 2011–

Conferences & Workshops Organization

BGSE Summer Forum on Time Series Analysis in Macro and Finance, Barcelona, June 6–7, 2017

BGSE Summer Forum on Time Series Analysis in Macro and Finance, Barcelona, June 20–21, 2016

BGSE Summer Forum on High-Frequency Financial Econometrics, Barcelona, June 11–12, 2015

BGSE Summer Forum on Time Series Analysis in Macro and Finance, Barcelona, June 8–9, 2015

BGSE Summer Forum on Time Series Analysis in Macro and Finance, Barcelona, June 19–20, 2014

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

Barcelona Workshop on Networks in Finance, Barcelona, May 3, 2012

Conference Scientific Committees

Fourth International Association of Applied Econometrics Conference, Sapporo, Japan, June 26–30, 2017

High Dimensional Time Series in Macroeconomics and Finance, Vienna, IHS, June 8–9, 2017

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. Student Job Market Placement

Yucheng Sun, 2014 (Co-supervised with Eulalia Nualart)
International School of Economics and Management at Capital University of Economics and Business (China)

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`.

Grants

BBVA Grant for Research on Big Data
(2016-2017, EUR 100,000, PI: Barbara Rossi)

Spanish Ministry of Science Research Group Grants
(2012-2015, MTM2012-37195, EUR 34,000, PI: Gabor Lugosi; 2015-2017, MTM2015-67304-P, EUR 43,000, PI: Gabor Lugosi and Omiros Papaspiliopoulos)

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