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Personal details

Birthplace: Milano, Italy. Citizenship: Italian.

Professional positions

2019-... Alma Mater Studiorum - Università di Bologna, Dipartimento di Scienze Economiche.
Full Professor.

2017-2019 London School of Economics and Political Science (LSE), Department of Statistics.
Associate Professor.

2010-2017 London School of Economics and Political Science (LSE), Department of Statistics.
Assistant Professor.

2008-2010 Université libre de Bruxelles, European Center for Advanced Research in Economics and Statistics (ECARES).
Post-doctoral Researcher.

Education

2008 Ph.D. Economics and Management (supervisor: M. Lippi).
Scuola Superiore Sant'Anna, Istituto di Economia, Pisa.

2003 M.Sc. Modelling and Simulation of Complex Realities.
International School for Advanced Studies (ISAS) and International Center for Theoretical Physics (ICTP), Trieste.

2002 M.Sc. *Laurea* in Physics – Mathematical Physics and Astrophysics (supervisors: A. Carati, L. Galgani).
Università degli studi di Milano.

Publications - Papers

36. "Factoring in the Micro: A Transaction-Level Dynamic Factor Approach to the Decomposition of Export Volatility", M. Barigozzi, A. Cuzzola, M. Grazzi, D. Moschella, *Oxford Bulletin of Economics and Statistics*, 2024+, available online. doi.org/10.1111/obes.12639
35. "FNETS: Factor-Adjusted Network Estimation and Forecasting for High-Dimensional Time Series", M. Barigozzi, H. Cho, D. Owens, *Journal of Business & Economic Statistics*, 2024, 42(3), 890-902. doi.org/10.1080/07350015.2023.2257270
34. "Inferential Theory for Generalized Dynamic Factor Models", M. Barigozzi, M. Hallin, M. Luciani, P. Zaffaroni, *Journal of Econometrics*, 2024, 239(2), 105422. doi.org/10.1016/j.jeconom.2023.02.003
33. "Inference in Heavy-Tailed Non-Stationary Multivariate Time Series", M. Barigozzi, G. Cavaliere, L. Trapani, *Journal of the American Statistical Association*, 2024, 119(545), 565-581. doi.org/10.1080/01621459.2022.2128807
32. "An Algebraic Estimator for Large Spectral Density Matrices", M. Barigozzi, M. Farnè, *Journal of the American Statistical Association*, 2024, 119(545), 498-510. doi.org/10.1080/01621459.2022.2126780
31. "`fnets`: An R Package for Network Estimation and Forecasting via Factor-Adjusted VAR Modelling", D. Owens, H. Cho, M. Barigozzi, *The R Journal*, 2023, 15(3), 214-239. doi.org/10.32614/RJ-2023-070
30. "Measuring the Output Gap Using Large Datasets", M. Barigozzi, M. Luciani, *The Review of Economics and Statistics*, 2023, 105(6), 1500-1514. doi.org/10.1162/rest_a_01119
29. "Testing for Common Trends in Non-Stationary Large Datasets", M. Barigozzi, L.Trapani, *Journal of Business & Economic Statistics*, 2022, 40(3), 1107-1122. doi.org/10.1080/07350015.2021.1901719
28. "Time-Varying General Dynamic Factor Models and the Measurement of Financial Connectedness", M. Barigozzi, M. Hallin, S. Soccorsi, R. von Sachs, *Journal of Econometrics*, 2021, 222(1B), 324-343. doi.org/10.1016/j.jeconom.2020.07.004
27. "Large-Dimensional Dynamic Factor Models: Estimation of Impulse-Response Functions with $I(1)$ Cointegrated Factors", M. Barigozzi, M. Lippi, M. Luciani, *Journal of Econometrics*, 2021, 221(2), 455-482. doi.org/10.1016/j.jeconom.2020.05.004
26. "Consistent Estimation of High-Dimensional Factor Models when the Factor Number is Over-Estimated", M. Barigozzi, H. Cho, *Electronic Journal of Statistics*, 2020, 14(2), 2892-2921 doi.org/10.1214/20-EJS1741
25. "Sequential Testing for Structural Stability in Approximate Factor Models", M. Barigozzi, L. Trapani, *Stochastic Processes and their Applications*, 2020, 130(8), 5149-5187. doi.org/10.1016/j.spa.2020.03.003
24. "Generalized Dynamic Factor Models and Volatilities: Consistency, Rates, and Prediction Intervals", M. Barigozzi, M. Hallin, *Journal of Econometrics*, 2020, 216(1), 4-34. doi.org/10.1016/j.jeconom.2020.01.003
23. "Cointegration and Error Correction Mechanisms for Singular Stochastic Vectors", M. Barigozzi, M. Lippi, M. Luciani, *Econometrics*, 2020, 8(3), 1-23. doi.org/10.3390/econometrics8010003

22. "NETS: Network Estimation for Time Series", M. Barigozzi, C. Brownlees, *Journal of Applied Econometrics*, 2019, 34(3), 347-364. doi.org/10.1002/jae.2676
21. "Identification of Global and Local Shocks in International Financial Markets via General Dynamic Factor Models", M. Barigozzi, M. Hallin, S. Soccorsi, *Journal of Financial Econometrics*, 2019, 17(3), 462-494. doi.org/10.1093/jjfinec/nby006
20. "Intellectual Property Rights, Imitation, and Development. The Effect on Cross-Border Mergers and Acquisitions", M. Campi, M. Dueñas, M. Barigozzi, G. Fagiolo, *The Journal of International Trade & Economic Development*, 2019, 28(2), 230-256. doi.org/10.1080/09638199.2018.1518477
19. "Power-Law Partial Correlation Network Models", M. Barigozzi, C. Brownlees, G. Lugosi, *Electronic Journal of Statistics*, 2018, 12(2), 2905-2929. doi.org/10.1214/18-EJS1478
18. "Simultaneous Multiple Change-Point and Factor Analysis for High-Dimensional Time Series", M. Barigozzi, H. Cho, P. Fryzlewicz, *Journal of Econometrics*, 2018, 206(1), 187-225. doi.org/10.1016/j.jeconom.2018.05.003
17. "On the Stability of Euro Area Money Demand and its Implications for Monetary Policy", M. Barigozzi, A. Conti, *Oxford Bulletin of Economics and Statistics*, 2018, 80(4), 755-787. doi.org/10.1111/obes.12239
16. "Spatio-Temporal Patterns of the International Merger and Acquisition Network", M. Dueñas, R. Mastrandrea, M. Barigozzi, G. Fagiolo, *Scientific Reports*, 2017, 7(1), 10789. doi.org/10.1038/s41598-017-10779-z
15. "Generalized Dynamic Factor Models and Volatilities: Estimation and Forecasting", M. Barigozzi, M. Hallin, *Journal of Econometrics*, 2017, 201(2), 307-321. doi.org/10.1016/j.jeconom.2017.08.010
14. "A Network Analysis of the Volatility of High-Dimensional Financial Series", M. Barigozzi, M. Hallin, *Journal of the Royal Statistical Society - series* C, 2017, 66(3), 581-605. doi.org/10.1111/rssc.12177
13. "Identifying the Independent Sources of Consumption Variation", M. Barigozzi, A. Moneta, *Journal of Applied Econometrics*, 2016, 31(2), 420-449. doi.org/10.1002/jae.2441
12. "Generalized Dynamic Factor Models and Volatilities: Recovering the Market Volatility Shocks", M. Barigozzi, M. Hallin, *The Econometrics Journal*, 2016, 19(1), C33-C60. doi.org/10.1111/ectj.12047
11. "Disentangling Systematic and Idiosyncratic Dynamics in Panels of Volatility Measures", M. Barigozzi, C. Brownlees, G. Gallo, D. Veredas, *Journal of Econometrics*, 2014, 182(2), 364-384. doi.org/10.1016/j.jeconom.2014.05.017
10. "Do Euro Area Countries Respond Asymmetrically to the Common Monetary Policy?", M. Barigozzi, A. Conti, M. Luciani, *Oxford Bulletin of Economics and Statistics*, 2014, 76(5), 693-714. doi.org/10.1111/obes.12038
9. "The Common Component of Firm Growth", L. Alessi, M. Barigozzi, M. Capasso, *Structural Change and Economic Dynamics*, 2013, 26, 73-82. doi.org/10.1016/j.strueco.2012.11.002
8. "The Distribution of Consumption-Expenditure Budget Shares", M. Barigozzi, L. Alessi, M. Capasso, G. Fagiolo, *Structural Change and Economic Dynamics*, 2012, 23, 69-91. doi.org/10.1016/j.strueco.2011.09.003
7. "Non-Fundamentalness in Structural Econometric Models: A Review", L. Alessi, M. Barigozzi, M. Capasso, *International Statistical Review*, 2011, 79(1), 16-47. doi.org/10.1111/j.1751-5823.2011.00131.x
6. "Identifying the Community Structure of the International Trade Multi Network", M. Barigozzi, G. Fagiolo, G. Mangioni, *Physica A: Statistical Mechanics and its Applications*, 2011, 390(11), 2051-2066. doi.org/10.1016/j.physa.2011.02.004
5. "Immigrant's Legal Status, Permanence in the Destination Country and the Distribution of Consumption Expenditure", M. Barigozzi, B. Speciale, *Applied Economics Letters*, 2011, 18(14), 1341-1347. doi.org/10.1080/13504851.2010.537618
4. "Improving Penalization when Determining the Number of Factors in Approximate Static Factor Models", L. Alessi, M. Barigozzi, M. Capasso, *Statistics and Probability Letters*, 2010, 80(23-24), 1806-1813. doi.org/10.1016/j.spl.2010.08.005
3. "The Multi-Network of International Trade: A Commodity-Specific Analysis", M. Barigozzi, G. Fagiolo, D. Garlaschelli, *Physical Review E*, 2010, 81(4), 046104. doi.org/10.1103/PhysRevE.81.046104
2. "On the Distributional Properties of Household Consumption Expenditures: The Case of Italy", G. Fagiolo, L. Alessi, M. Barigozzi, M. Capasso, *Empirical Economics*, 2010, 38(3), 717-741. doi.org/10.1007/s00181-009-0287-5
1. "On Approximating the Distributions of Goodness-of-fit Test Statistics Based on the Empirical Distribution Function: The Case of Unknown Parameters", M. Capasso, L. Alessi, M. Barigozzi, G. Fagiolo, *Advances in Complex Systems*, 2009, 12(2), 157-167. doi.org/10.1142/S0219525909002131

Publications - Chapters

4. "Quasi Maximum Likelihood Estimation of High-Dimensional Factor Models", M. Barigozzi, in: *Oxford Research Encyclopedia of Economics and Finance*, 2024, Oxford University Press, New York. doi.org/10.1093/acrefore/9780190625979.013.897, Pre-print version: arXiv.2303.11777
3. "Dynamic Factor Models: A Genealogy", M. Barigozzi, M. Hallin, in: N. N. Thach, N. D. Trung, D. T. Ha, V. Kreinovich (eds) *Partial Identification in Econometrics and Related Topics. Studies in Systems, Decision and Control*, 2024, Springer, Cham. doi.org/10.1007/978-3-031-59110-5_1, Pre-print version: arXiv.2310.17278
2. "Community Structure in the Multi-Network of International Trade", M. Barigozzi, G. Fagiolo, G. Mangioni, in: F. L. Costa, A. Evsukoff, G. Mangioni, R. Menezes (eds) *Complex Networks. Communications in Computer and Information Science*, 2011, vol. 116, 163-175, Springer, Berlin, Heidelberg. doi.org/10.1007/978-3-642-25501-4

1. "Dynamic Factor Models for Forecasting and Structural Identification", M. Barigozzi, in: L. Bauwens, R. von Sachs, Q. Yao (eds) *Mini-Workshop: Semiparametric Modelling of Multivariate Economic Time Series With Changing Dynamics. Mathematisches Forschungsinstitut Oberwolfach Reports*, 2010, 7(1), 186-188, European Mathematical Society, Zürich. doi.org/10.4171/OWR/2010/05

Edited books

– *Recent Advances in Econometrics and Statistics - Festschrift in Honour of Marc Hallin*, edited by M. Barigozzi, S. Hörmann, D. Paindavaine, 2024, Springer, Cham. doi.org/10.1007/978-3-031-61853-6, ISBN 978-3-031-61852-9

– *Time Series in High Dimensions. The General Dynamic Factor Model*, edited by M. Hallin, M. Lippi, M. Barigozzi, M. Forni, P. Zaffaroni, 2020, World Scientific Publishing, Singapore. doi.org/10.1142/11204, ISBN: 978-981-327-800-4

Editorials

– "Factor Models and High-Dimensional Time Series: A Tribute to Marco Lippi on the Occasion of his 80th Birthday", M. Barigozzi, M. Deistler, M. Hallin, *Econometrics and Statistics*, 2024+, available online. doi.org/10.1016/j.ecosta.2024.04.005

Working papers

– "Quasi Maximum Likelihood Estimation and Inference of Large Approximate Dynamic Factor Models via the EM Algorithm", M. Barigozzi, M. Luciani, 2019. arXiv.1910.03821

– "Large Datasets for the Euro Area and its Member Countries and the Dynamic Effects of the Common Monetary Policy", M. Barigozzi, C. Lissona, L. Tonni. 2024. ssrn.4968620

– "Tail-Robust Factor Modelling of Vector and Tensor Time Series in High-Dimensions", M. Barigozzi, H. Cho, H. Maeng. 2024. arXiv.2407.09390

– "The Dynamic, the Static, and the Weak Factors and the Analysis of High-Dimensional Time Series", M. Barigozzi, M. Hallin. 2024. arXiv.2407.10653

– "General Spatio-Temporal Factor Models for High-Dimensional Random Fields on a Lattice", M. Barigozzi, D. La Vecchia, H. Liu. 2023. arXiv.2312.02591

– "Asymptotic Equivalence of Principal Component and Quasi Maximum Likelihood Estimators in Large Approximate Factor Models", M. Barigozzi, 2023. arXiv.2307.09864

– "Factor Network Autoregressions", M. Barigozzi, G. Cavaliere, G. Moramarco, 2022. arXiv.2208.02925

– "Statistical Inference for Large-dimensional Tensor Factor Models by Iterative Projections", M. Barigozzi, Y. He, L. Li, L. Trapani, 2023. arXiv.2206.09800

– "Robust Tensor Factor Analysis", M. Barigozzi, Y. He, L. Li, L. Trapani, 2023. arXiv.2303.18163

– "Modelling Large Dimensional Datasets with Markov Switching Factor Models", M. Barigozzi, D. Massacci, 2022. arXiv.2210.09828

– "Hierarchical DCC-HEAVY Model for High-Dimensional Covariance Matrices", E. Dzuverovic, M. Barigozzi, 2023. arXiv.2305.08488

– "Multidimensional Dynamic Factor Models", M. Barigozzi, F. Pellegrino, 2023. arXiv.2301.12499

– "On Estimation and Inference of Large Approximate Dynamic Factor Models via the Principal Component Analysis", M. Barigozzi, 2022. arXiv.2211.01921

– "Quasi Maximum Likelihood Estimation of Non-Stationary Large Approximate Dynamic Factor Models", M. Barigozzi, M. Luciani, 2019. arXiv.1910.09841

Conferences and workshops (*invited, †keynote)

2025 VII International Workshop on Goodness-of-fit Change-Point, and Related Problems, Univerzita Karlova, Praha*.

2024 IMS International Conference on Statistics and Data Science, Nice*; Time Series Workshop in honour of Marco Lippi, Università di Roma Tor Vergata*; Conference in Memory of Carlo Giannini, Università di Pavia*; Bernoulli-IMS XI World Congress in Probability and Statistics, Ruhr University Bochum*; VI Vienna Workshop for High Dimensional Time Series in Macroeconomics and Finance, IHS, Vienna†; Workshop on Analysis of Complex Data: Tensors, Networks and Dynamic Systems, Banff International Research Station*.

2023 Workshop on Factor Modelling for Complex Time Series Data and Tensors, University of Bristol*; JSM, Toronto*; ECARES@30, Bruxelles*; SEM, Università degli studi di Milano-Bicocca*; Barcelona Summer Forum, Macroeconometrics and Policy Evaluation, Barcelona School of Economics*; XIII Workshop in Time Series Econometrics, Universidad de Zaragoza.

2022 XVI CFE, London*; XXXIII $(\mathrm{EC})^2$ on Econometrics of High Frequency Data & Factor Models, ESSEC, Paris; Rome-Bologna-Waseda International Time Series Symposium, Università di Roma Tor Vergata and Università di Bologna*; XLII International Symposium on Forecasting, University of Oxford*; II Workshop on Dimensionality Reduction and Inference in High-Dimensional Time Series, Universiteit Maastricht†; XII Workshop in Time Series Econometrics, Universidad de Zaragoza†.

2021 Workshop on Financial Econometrics, Universidade Federal do Rio Grande do Sul, Porto Alegre[*]; I Workshop on Dimensionality Reduction and Inference in High-Dimensional Time Series, Universiteit Maastricht[†]; VII Rimini Centre for Economic Analysis Time Series Econometrics Workshop, Milano; VII Conference of the International Association for Applied Econometrics, Erasmus University Rotterdam; North American Summer Meeting of the Econometric Society, Université du Québec à Montrèal; IX ICEEE, Università di Cagliari.

2020 Econometric Society's World Congress, Università Bocconi, Milano; II IWEEE, Università Ca' Foscari, Venezia.

2019 XXX (EC)^2 on Identification in Macroeconomis, University of Oxford; Galatina Summer Forum, Universitat Pompeu Fabra[*]; VI Conference of the International Association for Applied Econometrics, University of Cyprus, Nicosia; VI Rimini Centre for Economic Analysis Time Series Econometrics Workshop, Larnaca; Panel Data Forecasting Conference, INET, University of Southern California, Los Angeles[*].

Invited seminar talks

2025 CREST, ENSAE, Paris; Adam Smith Business School, University of Glasgow; Milan Time Series Seminars (MiTSS), FEEM, Milano.

2024 Department of Statistics, LSE; School of Economics and Finance, Queen Mary University of London; Centro de Estudios Quantitativos em Economia e Finanças, Fundação Getúlio Vargas, Sao Paulo; Department of Information Systems, Decision Sciences and Statistics, ESSEC Business School, Paris.

2023 Department of Economics, Københavns Universitet; Department of Economics and Business Economics, Årush Universitet; Virtual Time Series Seminar (VTSS), London; School of Economics and Management, Lunds Universitet; Department of Statistics, ITAM, Ciudad de México; Department of Applied Mathematics, Waseda University, Tokyo.

2022 Institute for Financial Studies, Shandong University; Chair of Econometrics, Universität Regensburg; Centre for Econometrics and Business Analytics, St. Petersburg University; Output Gap Working Group, European Commission, Bruxelles.

2021 Department of Economics, Universität Mannheim; Dipartimento di Scienze Statistiche, Università di Bologna; StatScale, Lancaster University.

2020 Royal Statistical Society, London; King's Business School, King's College London; Faculty of Economics, Cambridge University.

2019 ECARES, Université libre de Bruxelles; Department of Economics and Finance, Durham University; Now-Casting Economics Ltd., London; Econometric Institute, Erasmus University Rotterdam; Department of Mathematics, University of York; CREST, ENSAE, Paris; Economics Department, University of Southampton.

Courses taught

PhD *Advanced Statistics for Economics* (10hrs), Università di Bologna, 2020-...
Linear Algebra (10hrs), Università di Bologna, 2024-...
Dynamic Factor Models (~10hrs): CREST, 2024; III Klagenfurt-Bielefeld Summer School on Modern Topics in Time Series Analysis, 2022; Scuola Superiore Sant'Anna, Pisa, 2018, 2022, 2025; London Taught Course Centre (LSE-UCL), 2014, 2015; The Chinese University of Hong Kong, 2016; IHS, Vienna, 2013; Universidad de Alicante, 2013.
Time Series (~ 20hrs), Scuola Superiore Sant'Anna, Pisa, 2016, 2017, 2025; Università Bocconi, 2020.
Modelling Volatility in Time Series (~ 10hrs), SIdE, Bertinoro, 2012-2014.
Trade Networks (~ 3hrs), Universidad de Alicante, 2011.
Advanced Calculus (~ 20hrs), Scuola Superiore Sant'Anna, Pisa, 2008.

MSc *Econometric Methods* (30hrs), Università di Bologna, 2020-...
Machine Learning (30hrs), Università di Bologna, 2021-...
Factor Models in Time Series (15hrs), LSE, 2014-2016.
Applied Econometrics (48hrs), Paris School of International Affairs, Sciences Po, 2014, 2015.
Generalised Linear Modelling and Survival Analysis (30hrs), LSE, 2011-2014.

BSc *Big Data Applications* (40 hrs), Università di Bologna, 2024-...
Macroeconomia (60hrs), Università di Bologna, 2020-2022.
Time Series and Forecasting (30hrs), LSE, 2015-2019.
Probability, Distribution Theory, and Inference (30hrs), LSE, 2010-2019.

Associate editor

Econometrics Journal, 2023-...;
Statistical Inference for Stochastic Processes, 2019-...;
Industrial and Corporate Change (Macro), 2019-...;
International Journal of Forecasting, 2019-2022;
Journal of Korean Statistical Society, 2014-2019.

Autorizzo il trattamento dei miei dati personali ai sensi del Dlgs 196 del 30 giugno 2003 e dell'art. 13 GDPR (Regolamento UE 2016/679)
Bologna, 29 settembre 2024
Prof. Matteo Barigozzi