

Curriculum vitae

Name: Fabio Gobbi, PhD in Statistics

Position: Researcher at Department of Economics and Statistics (DEPS),
University of Siena

E-mail: fabio.gobbi@unisi.it

Education: Ph.D in Statistics (January 2003-December 2005) at the
Department of Statistics "G. Parenti", University of Florence. Ph.D Thesis:
*"Estimating the diffusion part of the covariation between two stochastic volatility
models with Levy jumps"*

Academic Research

- November 2006 - November 2007: **PostDoc in Mathematical Finance.**
Research program: *"Correlations and Co-jumps in financial asset prices:
model identification, estimation of parameters and applications to financial
data"*, Department of Matematica per le Decisioni, University of Florence
- January 2009 - December 2010: **PostDoc in Mathematical Finance.**
Research program: *"Copulas and Stochastic Processes"*, Department of
Matematical Economics, University of Bologna
- May, 2010: **Visiting researcher** at RMI - RISK MANAGEMENT IN-
STITUTE, National University of Singapore (NUS). Research Project:
NUS-RMI Credit Rating Research Project
- January 2011 - December 2012: **PostDoc in Mathematical Finance.**
Research program: *"Copula function and Market incompleteness"*, De-
partment of Matematical Economics, University of Bologna
- October 2013 - September 2014: **PostDoc in Mathematical Finance.**
Research program: *"Copula based Econometrics"*, Department of Statis-
tics, University of Bologna
- September 2015 - March 2020: **PostDoc in Mathematical Finance.**
Research program: *"Behavioral Credit Risk"*, Department of Statistics,
University of Bologna and **Credit Data Research Ltd. (CDR)**, 16
Brune Street, Coppergate House, E1 7NJ London, EC2M 1RX, UK.

Non-academic research

- Since October 2014 **Scientific Consultant** for **Credit Data Research
Ltd. (CDR)**, 16 Brune Street, Coppergate House, E1 7NJ London, EC2M
1RX, UK, for the development of credit risk models. In particular, with
the team of analysts of the company

- we have proposed, estimated and validated a new credit risk model (*Credit Data Behavioral, CDB*) based on behavioral inputs coming from the "Centrale dei Rischi" of *Bank of Italy*, an innovative and continuous flow of data. This model is currently used by CDR as a *credit passport* to companies that request it. \hat{A}
- We have submitted this model to the Rating Tool procedure within the ECAF (Eurosystem Credit Assessment Framework) at the *Euro-pean Central Bank*.
- The model was subsequently integrated by the *Moody's* financial model known as RiskCalc, thus generating a PD consisting of a behavioral part and a financial part.

Selected list of Publications (overall citations on Google Scholar until July 2022: 442)

1. Books

- (a) Cherubini U., Gobbi F., Mulinacci S., Romagnoli S. (2012): "*Dy-namic copula methods in Finance*", **John Wiley & Sons**,
- (b) Cherubini U., Gobbi F., Mulinacci S. (2016): "*Convolution Copula Econometrics*", **SpringerBriefs in Statistics**. This book has been reviewed in *Journal of Economic Literature*, 2017, 55(4), 1615-1619.
- (c) Gobbi F. (2015): "*Probability Theory. An Introduction*", Tempus Pucunia Est Collana di Matematica per le Scienze Economiche, Finanziarie e Aziendali, Aracne Editrice, ISBN 978-88-548-7824-2, formato 17 x 24 cm, 56 pp.

2. Articles

- (a) Gobbi F., Mulinacci S. (2022). "The impact of the time-varying dependence structure on the Value at Risk of a portfolio of exchange rates during the Covid-19 pandemic", **under review**.
- (b) Gobbi F., Mulinacci S. (2022). "Estimation and forecasting of the Japan GDP growth rate using a state-dependent autoregressive model", *Central European Journal of Economic Modelling and Econometrics*, **14(1)**, 1-27.
- (c) Gobbi F.(2021). "Evaluating Forecasts from State-Dependent Au-toregressive models for US GDP growth rate. Comparison with alter-native approaches", *Advances in Management & Applied Eco-nomics*, **11(6)**, 117-138. DOI: <https://doi.org/10.260/amae/1167>,
- (d) Gobbi F., Kolev N., Mulinacci S. (2021). "Extended Marshall-Olkin-Ryu Model with Implicit Shocks and Applications", *Insurance: Mathematics and Economics*, **101**, 342-358.

- (e) Gobbi F.(2021). "The problem of detecting nonlinearity in time series generated by a state-dependent autoregressive model. A simulation study", *Int. J. of Operational Research*, **45(3)**.
- (f) Gobbi F., Mulinacci S. (2021). "State-Dependent Autoregressive Models: Properties, Estimation and Forecasting", **under review**. Available at <https://ssrn.com/abstract=3823235>.
- (g) Cherubini U., Gobbi F., Mulinacci S. (2020). "Singularity Bias, Systemic Risk and Credit Indexes", **working paper**. Available on <http://ssrn.com/abstract=3409951>.
- (h) Cherubini U., Gobbi F., Mulinacci S. (2019). "Non Rational Expectations, Excess Volatility and Long Term Forward Risk Factors", **working paper**. Available on <https://papers.ssrn.com/abstract=3183756>.
- (i) Gobbi F., Mulinacci S. (2019). "Mixing and moments properties of a non-stationary copula-based Markov process", *Communications in Statistics: Theory and Methods*, **49(18)**, 4559-4570.
- (j) Gobbi F., Kolev N., Mulinacci S. (2019). "Joint Life Insurance Pricing Using Extended Marshall-Olkin Models", *ASTIN Bulletin - The Journal of the International Actuarial Association*, **49(2)**, 409-432.
- (k) Gobbi F. (2018). "Tail behavior of a sum of two dependence and heavy-tailed distributions", *Journal of Statistics and Management Systems*, **21(6)**, 933-953.
- (l) Gobbi F. (2016). "Convolution Based Unit Root Processes: A Simulation Approach", *International Journal of Statistics and Probability*, **5(6)**, 22-31.
- (m) Cherubini U., Gobbi F., Mulinacci S., Romagnoli S. (2016). "Granger Independent Martingale Processes", Available on <http://arxiv.org/abs/1607.01519>.
- (n) Gobbi F. (2014). "The Conditional C-Convolution Model and the Three Stage Quasi Maximum Likelihood Estimator", *Journal of Statistics: Advances in Theory and Applications*, **12(1)**, 1-26.
- (o) Cherubini U., Gobbi F. (2013). "A Convolution-based Autoregressive Process", in F. Durante, W. Haerdle, P. Jaworski editors. Workshop on Copula in Mathematics and Quantitative Finance. Lecture Notes in Statistics-Proceedings. Springer, Berlin/Heidelberg.
- (p) Cherubini U., Gobbi F., Villani E., Violi R. (2013). "Credit Risk Appraisal: Measurement, Validation and Ratings", **working paper** for NUS-RMI Credit Rating Research Project.
- (q) Cherubini U., Gobbi F., Mulinacci S. (2013). "Semi Parametric Estimation and Simulation of Actively Managed Portfolios", **working paper**.

- (r) Mancini, C., Gobbi F. (2012). "Identifying the diffusion covariation and the co-jumps given discrete observations", *Econometric Theory*, **28(2)**, 1-25.
- (s) Cherubini U., Gobbi F., Mulinacci S., Romagnoli S. (2010). "A copula-based model for spatial and temporal dependence of equity markets", in F. Durante, W. Haerdle, P. Jaworski and T. Rychlik editors. Workshop on Copula Theory and its Applications. Lecture Notes in Statistics-Proceedings. Springer, Berlin/Heidelberg.
- (t) Gobbi F., Mancini C. (2007). "Diffusion covariation and co-jumps in bidimensional asset price processes with stochastic volatility and infinite activity Levy jumps", in Complex Models and Computational Intensive Methods for Estimation and Prediction, edit by P. Mantovani, A. Pastore, S. Tonellato, CLEUP, Padova (260 - 265).

Teaching:

- **Department of Economics and Statistics, University of Siena**
 - Course of **Credit Risk Modeling. Module II**, a.y. 2019/2020
 - Course of **Credit Risk Modeling Financial Engineering. Module II**, a.y. 2019/2020
 - Course of **Financial Mathematics**. Degree course: ECONOMIA E COMMERCIO - ECONOMICS AND MANAGEMENT, from a.y. 2020/2021
 - Course of **Modelli per i Mercati Finanziari**. Degree course: SCIENZE ECONOMICHE E BANCARIE, from a.y. 2020/2021
- **Contract Professor of Statistics** at the Ph.D Program, University of Reggio Calabria, **October, 4-10, 2006**
- **Contract Professor of Finanza Computazionale** at the Faculty of Mathematics, Physics and Natural Sciences, University of Bologna, **Academic years 2008/2009, 2009/2010.**
- **Contract for tutorial of Mathematical Analysis I**, Faculty of Political Sciences, University of Bologna, **Academic years: 2010/2011, 2011/2012, 2012/2013**
- **Contract Professor** (in English) of **Laboratory in Probability**, School of Economics, Management e Statistics, Second cycle Degree in Quantitative Finance, University of Bologna. **Academic years: 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2017/2018, 2018/2019.**
- **Contract Professor** for the Workshop on **Copula Functions Copula-based Econometrics**, School of Economics, Management e Statistics, Second cycle Degree in Quantitative Finance, University of Bologna, **February-March, 2013.**

- **Contract Professor for Matematica Applicata all'Economia**, School of Economics, Management e Statistics, Degree in Economia Mercati e Istituzioni, University of Bologna, **Academic years: 2013/2014, 2014/2015, 2015/2016.**
- **Contract Professor of Assicurazioni Vita e Risparmio Gestito. Modulo II**, School of Economics, Management e Statistics, Degree in Finanza Assicurazioni e Impresa, University of Bologna, Rimini Campus, **Academic years: 2013/2014, 2014/2015, 2015/2016.**
- **Contract Professor of Programming in R. Master in Quantitative Risk Management.** University of Bologna and CRIF SpA, editions **2017, 2018, 2019, 2020, 2021.**
- **Contract Professor of Advanced Credit Risk. Master in Quantitative Risk Management.** University of Bologna and CRIF SpA, editions **2019, 2020, 2021.**
- **Contract Professor (in English) of Programming in R.** Intensive Program: Finance and Energy Market, School of Economics, Management e Statistics, Degree in Quantitative Finance, University of Bologna, **Academic year: 2017/2018.**
- **Senior Teaching Assistant** of the course **Quantitative Approaches to Risk Assessment** at School of Advances in International Studies, Johns Hopkins University, Spring Semester, **February-May 2018 and 2019.**
- **Contract for tutorial of Esercitazioni di Matematica Generale e Matematica Applicata all'Economia**, School of Economics, Management e Statistics, Degree in Economia Mercati e Istituzioni, University of Bologna, **Academic years: 2016/2017, 2017/2018, 2018/2019, 2019/2020.**