

Curriculum vitae

Name: Fabio Gobbi, born on the 7th of June, 1976 in Montevarchi (AR)

Affiliation: Department of Economics and Statistics (DEPS), University of Siena, p.zza San Francesco 7-8, 53100, Siena

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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 Lévy jumps*". Advisors: Prof. Giorgio Calzolari, Prof. Cecilia Mancini

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. Advisor: Cecilia Mancini
- January 2009 - December 2010: **PostDoc in Mathematical Finance**. Research program: "*Copulas and Stochastic Processes*", Department of Matematical Economics, University of Bologna. Advisor: Prof. Umberto Cherubini
- May, 2010: **Visiting researcher** at the National University of Singapore (NUS)
- January 2011 - December 2012: **PostDoc in Mathematical Finance**. Research program: "*Copula function and Market incompleteness*", Department of Matematical Economics, University of Bologna. Advisor: Prof. Sabrina Mulinacci
- October 2013 - September 2014: **PostDoc in Mathematical Finance**. Research program: "*Copula based Econometrics*", Department of Statistics, University of Bologna. Advisor: Prof. Sabrina Mulinacci
- 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. Advisors: Prof. Umberto Cherubini and Prof. Sabrina Mulinacci
- From April 2020: **Researcher. Department of Economics and Statistics (DEPS), University of Siena**

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.

- We have submitted this model to the Rating Tool procedure within the ECAF (Eurosystem Credit Assessment Framework) at the *European 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.

List of Publications (overall citations on Scholar Google until October 2020: 368)

1. Books

- (a) Cherubini U., Gobbi F., Mulinacci S., Romagnoli S. (2012): *"Dynamic 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.(2020): *"Evaluating Forecasts from State-Dependent Autoregressive models for US GDP growth rate. Comparison with alternative approaches"*, **under review**.
- (b) Gobbi F.(2020): *"The problem of detecting nonlinearity in time series generated by a state-dependent autoregressive model. A simulation study"*, forthcoming in ***Int. J. of Operational Research***.
- (c) Gobbi F., Mulinacci S. (2020): *"State-Dependent Autoregressive Models: Properties, Estimation and Forecasting"*, **under review**. Available at <http://arxiv.org/abs/2002.03134>
- (d) Cherubini U., Gobbi F., Mulinacci S. (2020): *"Singularity Bias, Systemic Risk and Credit Indexes"*, **under review**. Available on <http://ssrn.com/abstract=3409951>.
- (e) Cherubini U., Gobbi F., Mulinacci S. (2019): *"Non Rational Expectations, Excess Volatility and Long Term Forward Risk Factors"*, **under review**. Available on <https://papers.ssrn.com/abstract=3183756>.
- (f) Gobbi F., Kolev N., Mulinacci S. (2019): *"Extended Marshall-Olkin-Ryu Model with Implicit Shocks and Applications"*, **under review**.
- (g) Gobbi F., Mulinacci S. (2019): *"Mixing and moments properties of a non-stationary copula-based Markov process"*, forthcoming in ***Communications in Statistics: Theory and Methods*, 49(18), 4559-4570**.
- (h) 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**.
- (i) 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**

- (j) Gobbi F. (2016): "*Convolution Based Unit Root Processes: A Simulation Approach*", ***International Journal of Statistics and Probability***, **5(6)**, 22-31
- (k) Cherubini U., Gobbi F., Mulinacci S., Romagnoli S. (2016): "Granger Independent Martingale Processes", Available on <http://arxiv.org/abs/1607.01519>
- (l) Gobbi F., (2014): "*Conditional dynamics for the multidimensional dependence structure among financial assets*", ***Open Journal of Finance***, **1(2)**, 1-18
- (m) 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
- (n) 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
- (o) 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
- (p) Cherubini U., Gobbi F., Mulinacci S. (2013): "*Semi Parametric Estimation and Simulation of Actively Managed Portfolios*", working paper
- (q) Mancini, C., Gobbi F. (2011): "*Identifying the diffusion covariation and the co-jumps given discrete observations*", ***Econometric Theory***, **28**, 1-25
- (r) 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
- (s) Gobbi F., Mancini C. (2007): "*Diffusion covariation and co-jumps in bidimensional asset price processes with stochastic volatility and infinite activity Lévy jumps*", in Complex Models and Computational Intensive Methods for Estimation and Prediction, edit by P. Mantovani, A. Pastore, S. Tonellato, CLEUP, Padova (260 - 265)
- (t) Gobbi F., Mancini C. (2007): "*Estimating the diffusion part of the covariation between two volatility models with jumps of Lévy type*", In: ed.s V.Cutello, G.Fotia, L.Puccio. Applied and Industrial Mathematics in Italy II, Selected contributions from the 8th SIMAI Conference Vol, vol. 75 in Series on advances in mathematics for applied sciences, pp 339-409, , Hackensack, NJ 07601 USA: World Scientific. Pubblicazione ISI
- (u) Gobbi, F. (2006): "*Estimating the diffusion part of the covariation between two stochastic volatility models with Lévy jumps*" Ph.D thesis, Department of Statistics "G. Parenti", University of Florence
- (v) Gobbi F., Mancini C. (2005): "*Estimating the continuous part of the covariation process in jump diffusion models with finite activity jump part*", in Modelli Complessi e metodi computazionali intensivi per la stima e la previsione, CLEUP, Padova (329 - 333) (Settembre, 2005)

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**. Corso di Studio: ECONOMIA E COMMERCIO, percorso: ECONOMICS AND MANAGEMENT, a.y. 2020/2021
 - Course of **Modelli per i Mercati Finanziari**. Corso di Studio: SCIENZE ECONOMICHE E BANCARIE, percorso: BANCA E FINANZA, 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 "*Matematica Generale*", 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 Economia Management e Statistica, 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** (in English) of "*Workshop on Copula Functions: Copula-based Econometrics*", School of Economia Management e Statistica, Second cycle Degree in Quantitative Finance, University of Bologna, **February-March, 2013.**
- **Contract Professor** for "*Matematica Applicata all'Economia*", School of Economia Management e Statistica, 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 Economia Management e Statistica, 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.**
- **Contract Professor** of "*Advanced Credit Risk*". **Master in Quantitative Risk Management.** University of Bologna and CRIF SpA, **editions 2019, 2020.**
- **Contract Professor** (in English) of "*Programming in R*", Intensive Program: Finance and Energy Market, School of Economia Management e Statistica, 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 Economia Management e Statistica, Degree in Economia Mercati e Istituzioni, University of Bologna, **Academic years: 2016/2017, 2017/2018, 2018/2019, 2019/2020.**

Conferences:

- **9th International Workshop on Applied Probability, IWAP**, Budapest (Hungary), 18-21 June 2018: *Convolution Autoregressive Processes* in invited session "Copula functions".
- **XII Workshop on Quantitative Finance**, Padova (Italy), 27-28 January 2011: *Semi Parametric Estimation and Simulation of Actively Managed Portfolios*.
- **Conference** on "Dynamic copula methods in Finance", University of Bologna, October 6-11, 2010: *Dependent increments Markov Processes*
- **IX Workshop on Quantitative Finance**, January, 24-25, 2008, University of Rome "Tor Vergata": *Identifying the diffusion covariation and the co-jumps given discrete observations*
- **SPIE Fluctuations and Noise**, May 20-24, 2007, Florence, Poster session: *Diffusion covariation and co-jumps in bidimensional asset price processes with stochastic volatility and infinite activity Lévy jumps*
- **AMASES 2006**, September, 2006, Trieste: *Diffusion covariation and co-jumps in bidimensional asset price processes with stochastic volatility and infinite activity Lévy jumps*
- **Sco 2005** (University of Padova), September, 4-6, 2005, Bressanone: *Estimating the continuous part of the covariation process in jump diffusion models with finite activity jump part*
- **Workshop in Risk Theory**, University of Florence, Poster session, October 2005, Florence: *Estimating the continuous part of the covariation process in jump diffusion models with finite activity jump part*

Summer schools and other courses:

- **Spring School in Finance** "Crash course on risk management of derivative securities". Prof. R. Cont, Prof. F. Mercurio, Department of Mathematics, University of Bologna, May, 17-18, 2007
- Course: "Jump processes and finance". Prof. J. Jacod, Department of Matematica per le Decisioni, University of Florence, March, 7-9, 2007
- **Advanced course of Applied Mathematics** in "Copula function and its application in Finance". Prof. P. Tankov (University of Paris VI), Department of Matematica per le Decisioni, University of Florence, November, 2006
- **Summer school in "Mathematical finance"**. Scuola Matematica Interuniversitaria, Cortona, July-August, 2006. Prof. W.J. Runggaldier (University of Padova) and Prof. U. Schmock (Vienna University of Technology)
- **CIDE: Summer school in Econometrics**, Bertinoro, University of Bologna, September, 5-18, 2004. Director Prof. G. Calzolari (University of Florence)