

## CURRICULUM VITAE

### SILVIA MUZZIOLI

#### PERSONAL DETAILS:

Muzzioli, Silvia

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SCOPUS ID: [6507158710](https://scopus.org/authorid/6507158710)

RESEARCHER ID: B-3717-2016

Date of birth: 01/01/1974

Nationality: Italian

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#### ADDRESS:

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University of Modena and Reggio Emilia

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I-41121 Modena, ITALY

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#### CURRENT POSITION:

**Full Professor** in Quantitative Methods for Economics and Finance, Department of Economics “Marco Biagi”, University of Modena and Reggio Emilia, Italy.

#### NATIONAL SCIENTIFIC QUALIFICATIONS:

20 April 2021 - : national scientific qualification as **Full Professor** in Quantitative Methods for Economics and Finance.

04 June 2021 - : national scientific qualification as **Full Professor** in Economic Policy.

19 May 2021 - : national scientific qualification as **Full Professor** in Economics of Financial Intermediaries and Corporate Finance

05 February 2014 - : national scientific qualification as **Full Professor** in Quantitative Methods for Economics and Finance.

04 December 2014 - : national scientific qualification as Associate Professor in Statistics applied to Economics.

#### PAST POSITIONS:

01 November 2014 – 30 December 2021:

Associate Professor in Quantitative Methods for Economics and Finance, Department of Economics “Marco Biagi”, University of Modena and Reggio Emilia, Italy

01 October 2001- 30 October 2014:

Assistant Professor (tenure) in Quantitative Methods for Economics and Finance, Department of Economics “Marco Biagi”, University of Modena and Reggio Emilia, Italy

January -September 2001:

Research assistant for the project "Fuzzy methods for derivatives pricing"

Department of Economics “Marco Biagi”, University of Modena and Reggio Emilia,

Italy

### **CAREER BREAKS:**

15/09/2005 to 27/05/2006      Maternity leave 8 months.

23/08/2008 to 26/01/2009      Maternity leave 5 months.

### **EDUCATION:**

05 February 2001      PhD Computational methods for financial forecasting and decision making  
Department of Mathematics, Statistics, Computer Science and applications,  
University of Bergamo, Italy

January 2000      Master of Science in Banking and Finance, HEC, University of Lausanne,  
Switzerland

### **COMPETITIVE RESEARCH GRANTS:**

#### **PRINCIPAL INVESTIGATOR OF INTERNATIONAL RESEARCH PROJECTS:**

**2022-2024**      Principal Investigator of the interdisciplinary research project: “COMposite INDicators of market Sentiment (COINS)”, **Budget € 44.580,00 Euro**, funded by University of Modena and Reggio Emilia, National Departments involved: Department of Economics, Department of Physics, Informatics and Mathematics, Department of Communication and Economics (University of Modena and Reggio Emilia). International Departments involved: Department of Data Analysis and Mathematical Modelling, Ghent University, Ghent (Belgium); Department of Finance, Fox School of Business and Management - Temple University, Philadelphia (USA); Department of Computer Science and Artificial Intelligence, University of Granada, Granada (Spain).

**2019-2022**      Principal Investigator of the interdisciplinary research project: “Risk assessment in the EU: new indices based on machine learning methods.”, **Budget € 40.000,00 Euro**, funded by University of Modena and Reggio Emilia, National Departments involved: Department of Economics, University of Modena and Reggio Emilia and Department of Physics, Informatics and Mathematics. International Departments involved: Department of Applied Mathematics, Biometrics and Process Control, Ghent University, Ghent (Belgium).

**2018-2020**      Principal Investigator of the interdisciplinary research project: “The role of asymmetry and Kolmogorov equations in financial risk modelling (ARM)”, **Budget € 50.000,00 Euro**, funded by University of Modena and Reggio Emilia, National Departments involved: Department of Economics, University of Modena and Reggio Emilia and Department of Physics, Informatics and Mathematics. International Departments involved: Department of Applied Mathematics, Biometrics and Process Control, Ghent University, Ghent (Belgium).

**2015-2018**      Principal Investigator of the international research project: “Implied Volatility and higher order moments: new measures and indexes of financial connectedness”, **Budget: € 66.233,57**, funded by Dep. of Economics "Marco Biagi" ( 23.633,57) and Fondazione Cassa di Risparmio di Modena (42.600,00); National Departments involved: Department of Economics, University of Modena and Reggio Emilia and Department of Economics, Mathematics and Statistics, University of Palermo; international Departments involved: Department of Applied Mathematics, Biometrics and Process Control, Ghent University, Ghent (Belgium), Department of Finance, Temple University, Philadelphia, USA.

**2010-2013** Principal Investigator of the international research project: “Volatility modelling and forecasting with option prices: the proposal of a volatility index for the Italian market”, **Budget € 23.529,41**, funded by Fondazione Cassa di Risparmio di Modena and MIUR. National Departments involved: Department of Economics, University of Modena and Reggio Emilia and Department of Mathematics, Statistics, Computing and Applications of the University of Bergamo, international Departments involved: Department of Banking and Financial Management, University of Piraeus, Athens (Greece), Business Administration Department, Universidad Rey Juan Carlos, URJC, Madrid (Spain), Department of Applied Mathematics, Biometrics and Process Control, Ghent University, Ghent (Belgium).

#### **PRINCIPAL INVESTIGATOR OF NATIONAL PROJECTS:**

**2023 – 2025** Principal Investigator of the project **PRIN PNRR: “CLIMATE RISK AND STOCK RETURNS”**, **Budget: 265.703**, funded by the European Unione, Next Generation EU.

**2023-2024** Principal Investigator of the project (**FAR23**) “ESG REPORTING AND MEASUREMENT, IMPLICATIONS FOR INVESTOR SENTIMENT AND STOCK RETURNS” **Budget: 8.000 Euro**, funded by the University of Modena and Reggio Emilia.

**2021-2023** Principal Investigator of the project FAR21 “Market Sentiment and trading behaviour” **Budget: € 27.000**, funded by the University of Modena and Reggio Emilia.

**2016-2018** Principal Investigator of the national project: “A skewness index for Europe (EU-SKEW)” **Budget: € 7.000,00**, funded by the University of Modena and Reggio Emilia.

**2001-2002** Principal Investigator of the Young researchers project “Fuzzy models for pricing structured products”, **Budget € 5.000,00**, funded by the University of Modena and Reggio Emilia.

#### **OTHER GRANTS:**

FFABR 2017: budget: € **3000,00** awarded by the Minister of Education for research.

Mobility project for young researchers 2019 funded by University of Modena and Reggio Emilia, budget: € **3.000,00** beneficiary: Dott. Luca Gambarelli.

#### **EDITORIAL ACTIVITY:**

11/2022 - Area Editor for the section: The future of Financial Markets of the Encyclopedia of Monetary Policy, Financial Markets and Banking, led by Editor-in-chief Nikolaos Apergis

01/2019- member of the Editorial Board of the journal Fuzzy Sets and Systems (impact factor 2.675).

06/2020 - Associate Editor of Multinational Finance Journal  
(<http://www.mfsociety.org/page.php?pageID=161>)

2017- Director of the series: “DEMB working paper series” ISSN on line: 2281-440X.

### **FELLOWSHIPS:**

2012- KERMIT Research Unit Knowledge-based Systems.

### **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS:**

2001 – 60 students among Bachelor, Master and PhD

01-02-2024 – 31-01-2025 Research grant “Climate risk and uncertainty: environmental sustainability and asset pricing” annual grant, research assistant: Alessio Capriotti.

01-03-2023 – 30-04-2024 Research grant “Composite indicators of market sentiment” annual grant, research assistant: Luca Gambarelli.

01-03-2022 – 28-02-2023 Research grant “Market Sentiment and trading behaviour” annual grant, research assistant: Luca Gambarelli.

16-03-2020 – 15-09-2021 Research grant “Risk assessment in the EU: new indices based on machine learning methods.” annual grant, research assistant: Giovanni Campisi.

01-02-2019- 31-01-2020 Research grant “The role of Asymmetry and Kolmogorov equations in financial Risk Modelling (ARM).” annual grant, research assistant: Giovanni Campisi.

15-01-2016- 15-01-2018 Research grant “Implied moments (IMOM)”, research assistant: Luca Gambarelli

### **OFFICIAL APPOINTMENTS:**

July 23- Member of the Board of Directors of the Multinational Finance Society

November 2022- Member of the scientific committee of the AMASES association (Associazione per la Matematica Applicata alle Scienze Economiche e Sociali).

28-2-2021- Registered in the REPRISE register for the sections: basic research; competitive industrial research and social development

25/01/21- member of the selection committee for awarding the title of Research Doctor for the PhD in “Labour, Development and Innovation” (XXXIII cycle)

23/11/2020- Expert for the evaluation of proposals for Doctoral scholarships in the national program for research and innovation 2014-2020 and of the Research Extract Plan and Innovation 2015-2017, pursuant to the D.D. of 30 July 2020, n. 1233/2020

2018- Member of the Doctoral Research School Council, International Doctoral Research School in Labour, Development and Innovation, Marco Biagi Foundation, University of Modena and Reggio Emilia

2016- Independent Expert of the European Commission for the evaluation of proposals, prize applications and tenders, monitoring of actions, grant agreements, public procurement contracts, preparation, implementation and evaluation of EU programmes and design of policies Expert Id:EX2016D293311.

2013 – Appointed referee for R&D projects funded by the Italian Ministry of Education and Research (MIUR)

2020 February-March member of the selection committee for the Public competition for recruitment of a fixed-term researcher under art. 24, paragraph 3 lett. a), of Italian Law 240/2010, Department of Economics and Statistics, University of Trieste.

2020 February-March member of the selection committee for the Public competition for recruitment of a research assistant, Department of Economics, University of Modena and Reggio Emilia.

11-2019 Availability as referee for the Research Executive Agency (REA) in the call WIDEPSREAD-05-2020.

2019 March-April member of the selection committee for the Public competition for recruitment of a research assistant, Department of Economics, University of Modena and Reggio Emilia.

2018 December-January 2019 member of the selection committee for the Public competition for recruitment of a research assistant, Department of Economics, University of Modena and Reggio Emilia

2018-November Evaluator for the SAFD PhD School - University of Bergamo

2018 November member of the selection committee for the Public competition for recruitment of a research assistant, Department of Economics, University of Modena and Reggio Emilia.

2016-2017 Referee for VQR 11-14 evaluation of the quality of Italian research.

2017 September-October member of the selection committee for the Public competition for recruitment of a fixed-term researcher under art. 24, paragraph 3 lett. a), of Italian Law 240/2010, Department of Economics, University of Verona.

2017 May member of the PhD committee in Models and Methods for Economics and Business and PhD committee Economics, Applied Mathematics and operations research, University of Bergamo

2015 December member of the selection committee for the Public competition for recruitment of a research assistant, Department of Economics, University of Modena and Reggio Emilia.

## **MEMBER OF SCIENTIFIC COMMITTEES:**

International Fintech Research Conference 2023, Parthenope University of Naples, November 2-3, 2023, International Fintech Research Conference 2022, Politecnico di Milano, October 27-28, 2022, AMASES XLVII, annual conference, Milan, (20-22 September, 2023), Multinational Finance Society, 29<sup>th</sup> (Pafos, Cyprus 2023), 25<sup>th</sup> annual meeting, Budapest, (2018), 26th annual meeting, Jerusalem (2019). The 12th International Workshop on Fuzzy Logic and Applications, Genova (2018).

## **MEMBER OF RESEARCH GROUPS AND QUALIFIED RESEARCH CENTERS :**

05/05/2022 Member of fintech research network, a community of researchers from different universities, united by a common interest in studying and be propositive in the fintech revolution.

22/02/2021 Coordinator of FINMORE: a multi-disciplinary group gathering the best contributions on finance and fintech among researchers of the University of Modena and Reggio Emilia.

25-08-2020 Artificial Intelligence Research and Innovation Center (AIRI ), AIRI is an accredited laboratory of the High Technology Network of the Emilia-Romagna Region.

## **JOURNAL REFEREE (selected):**

Fuzzy Sets and Systems, Fuzzy Optimization and Decision Making, IEEE Transactions on fuzzy systems, IEEE transactions on industrial informatics, European Journal of Operational Research, Applied Economics, Quantitative Finance, PLOS ONE, Journal of International Money and Finance, Annals of Finance, Economic Modelling, International Journal of Approximate Reasoning, Computational Economics, Information Sciences, International Journal of Uncertainty, Fuzziness and Knowledge Based Systems, Journal of Futures Markets, Journal of Economics and Business, Journal of Financial Management, Markets and Institutions, Soft Computing, OR Spectrum, Applied Mathematical Modelling, International Journal of Information Technology and Decision Making, Mathematical and Computational Applications, Computers and Mathematics with Applications, The Quarterly review of Economics and Finance.

## **INVITED SEMINARS:**

Department of Finance, Fox School of Business, Temple University, Philadelphia (2019), Department of Economics, University of Verona (2019), Department of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia (2018), Department of Commerce, Finance and Shipping, Cyprus University of Technology (2017), Department of Economics and Social Sciences, Università Politecnica delle Marche (2016), Department of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia (2016), Department of Economics and Statistics, University of Siena (2015), Department of Mathematical Modelling, Statistics and Bioinformatics, Ghent University, Belgium (2013), Department of Mathematics, University of Bologna (2012), Department of Banking and Financial Management, University of Piraeus, Athens, Greece (2011); Department of Quantitative Methods for Economics and Business, University of Milano-Bicocca (2011).

## **SHORT VISITS:**

Yale School of Management (1-7 September 2019), Temple University, Philadelphia, Fox School of Business (17 June- 15 September 2019), Czech University of Life Sciences (June 2018), Cyprus University of Technology (September 2017), Temple University, Philadelphia, Fox School of Business (October 2015), University of Ghent (June 2013), University of Piraeus (June 2011).

## **RECENT INTERNATIONAL AND NATIONAL CONFERENCE PRESENTATIONS:**

Converging paths in commodity and financial markets, Abu Dhabi-UAE (2023), 29th Annual Conference of the Multinational Finance Society, Cyprus (2023), 28th Annual Conference of the Multinational Finance Society, Gdańsk (2022), FMA Annual Meeting Virtual (2021), WILF 2021 Virtual International Workshop on Fuzzy Logic and Applications (2021), 27th Annual Conference of the Multinational Finance Society Virtual (2020), Workshop on Quantitative Finance, Zurich (2019), AMASES Naples (2018), 12th International Workshop on Fuzzy Logic and Applications, Genova (2018), Multinational Finance Society 25<sup>th</sup> annual conference, Budapest (2018), European Financial Management Association 2018 annual meeting, Milan (2018), XIX Workshop in Quantitative Finance, Rome (2018), AMASES Cagliari (2017), FUZZIEEE 2017 Naples (2017), Multinational Finance Society 24<sup>th</sup> annual conference, Bucharest (2017), XVIII Workshop on Quantitative Finance, Milan (2017), 7<sup>th</sup> CEQURA Conference, Monaco, (2016), XVII Workshop on Quantitative Finance, Pisa (2016), Financial Management Association Annual Meeting, Orlando, Florida, (2015), XXXIX AMASES Padova (2015), XVI Workshop on Quantitative Finance, Parma (2015), Financial Management Association European Conference, Maastricht (2014);

## **CURRENT TEACHING ACTIVITIES:**

- 2023- Decision Methods for Economics and Finance (42 hours), Department of Economics, University of Modena and Reggio Emilia, Italy.
- 2018- Fuzzy Sets and Systems in the course Methods for Research (12 hours), PhD in Labour, Development and Innovation.
- 2023- Financial modelling (applications) (42 hours), (in English) Department of Economics, University of Modena and Reggio Emilia, Italy.
- 2023- Mathematics for economics and finance (42 hours), Department of Economics, University of Modena and Reggio Emilia, Italy.

## **PAST TEACHING ACTIVITIES (UNDERGRADUATE, GRADUATE AND MASTER COURSES):**

- 2012-2023 Financial modelling (applications) (48 hours), (in English) Department of Economics, University of Modena and Reggio Emilia, Italy.
- 2012-2023 Mathematics for economics and finance (48 hours), Department of Economics, University of Modena and Reggio Emilia, Italy.
- 2021-2023 Mathematical Models for Finance (42 hours), Department of Physics, Informatics and

- Mathematics, University of Modena and Reggio Emilia, Italy.
- 2014-2022 Mathematics and financial mathematics (48 hours), Department of Economics, University of Modena and Reggio Emilia.
- 2013-2014 Data Analysis for Economics (21 hours) Department of Economics, University of Modena and Reggio Emilia
- 2011-2012 Data Analysis for Finance (42 hours) Department of Economics, University of Modena and Reggio Emilia.
- 2006-2010 Financial Mathematics (34 hours) Department of Economics, University of Modena and Reggio Emilia.
- 2006-2009 Risk Management (34 hours) Department of Economics, University of Modena and Reggio Emilia
- 2009-2010 Risk Management (21 hours) Department of Economics, University of Modena and Reggio Emilia).
- 2002-2008 Computer Science for Finance (Bonds and Equities), (32 hours) Department of Economics, University of Modena and Reggio Emilia.
- 2002-2005 Computer Science for Finance (Derivatives), (32 hours) Department of Economics, University of Modena and Reggio Emilia.
- 2002-2004 Computer Science (16 hours) Master in “International Management” Department of Economics, University of Modena and Reggio Emilia.
- 1997-2011 Mathematics (introductory course) (16 to 30 hours) Department of Economics, University of Modena and Reggio Emilia

#### **CURRENT INSTITUTIONAL RESPONSIBILITIES:**

- 2007 – ERASMUS Coordinator University Rey Juan Carlos, Madrid.

#### **RECENT PAST INSTITUTIONAL RESPONSIBILITIES:**

- 2020 -2023 Delegate of the department for the evaluation of quality of the research (VQR 15-19) and coordinator of the department committee for VQR 15-19.
- 2016 –2023 Delegate of the Department for Research, Department of Economics of the University of Modena and Reggio Emilia
- 2017 –2023 Faculty member in charge of Departmental Seminars at the Department of Economics of the University of Modena and Reggio Emilia
- 2016 –2022 Member of the executive board of the Department of Economics of the University of Modena and Reggio Emilia

- 2021-2022 Member of the working group for the new Master degree in Data Analysis for Economics and Management at the Marco Biagi Dep. of Economics, University of Modena and Reggio Emilia
- 14/10/2020-13/01/2021 Member of the department committee on public engagement of the University of Modena and Reggio Emilia
- 02/2019-11/2019 Member of the committee on Research Assessment of the University of Modena and Reggio Emilia
- 2016 – 2020 Quality Manager of the Department, Department of Economics of the University of Modena and Reggio Emilia
- 2016-2020 Coordinator of the committee on the quality and assessment of the Research of the Department (SUA-RD), Department of Economics of the University of Modena and Reggio Emilia, Italy
- 2016 –2017 Delegate of the Department for Business and Community Engagement, Department of Economics of the University of Modena and Reggio Emilia
- 2015 –2015 Member of the Quality committee of the Department, Department of Economics of the University of Modena and Reggio Emilia
- 2014-2015 Member of the joint Committee on teaching (students-faculty members), Department of Economics of the University of Modena and Reggio Emilia

#### **BUSINESS AND COMMUNITY ENGAGEMENT:**

- 20/11/2020- 24/10/23 member of the Board of Directors and member of the advisory board of Start-up IDEM which has among the missions that of measuring and certifying gender-equality in the workplace.
- 20/10/2020- 19/10/2025 Scientist in charge of the agreement between the Department of Economics marco Biagi and SINTHERA for teaching and research.
- 20/10/2020-19/10/2021 Scientist in charge of the research project “Machine learning methods for economics and finance” financed by SINTHERA, 16.000 Euro.
- January 2020-January 2023 Scientist in charge of the agreement between UNIMORE (University of Modena and Reggio Emilia) and CONSOB (Italian national commission for listed companies and the stock exchange)
- December 2019-January 2020 Scientist in charge of letter of intents (Confindustria Emilia Romagna, ART-ER, Nomisma, Elfi Systems, Sinthera) for the cooperation in the project BIG DEAL submitted to H2020-MSCA-ITN-2020: BIG DEAL “Big data and Machine learning for the European financial market risk assessment”, budget: Euro 2.828.466,72.

- November 2018 - April 2018 Member of the committee on the state exam for accountants.
- University representative for UNIMORE for the spin-off K-LOOPS (Scientist in charge: Prof. Marcello Pellicciari, year 2019) for the development and marketing of software for simulation of energy efficient processes.
- 29 November 2019. Organization of the Digital workshop on fuzzy methods “How to measure innovation, competitiveness and risk: the advantages of a fuzzy approach”, Marco Biagi Foundation.
- 17 December 2018. Organization of the event on “The golden age of aggregation”, with the seminar of Prof. Bernard De Baets (University of Ghent, Belgium)
- 8 May 2018. Organization of the event on “Big Data Analytics”, with the seminar of Prof. Alberto Fernandez, University of Granada (Spain).
- 7 May 2019 – Seminar at CRISE, UNIMORE, in collaboration with the National Association of Engineers and Accountants “Mathematics and Statistics for the Economy: risk assessment and strategic choices”.
- January 19- Participation to the project “Multilayer Analysis on the digital maturity of firms in the Emilia-Romagna Region” PI: Prof. Solinas Giovanni, budget: 40.000 Euro, agreement with Regione Emilia-Romagna, Unioncamere Emilia-Romagna and University of Modena and Reggio Emilia.
- June - September 2018 Scientist in charge of the joint commercial project “Evaluation and construction of leasing plans” with the society “SIFA’ Società Italiana Flotte Aziendali S.p.A”.
- May 2016 - May 2017 Scientist in charge of the joint project “Analysis and diffusion of the mathematical culture” with the association Pensieri A Fumetti.  
12 May 2017 Event: “Pensieri a fumetti Festival”, speech on: “Un giallo matematico: il ritrovamento degli appunti di Archimede”.
- December - April 2017 Scientist in charge of the joint commercial project “Mathematical aspects of leasing” with the society “SIFA’ Società Italiana Flotte Aziendali S.p.A”.
- July 2017 candidate as speaker at CAMPUS PARTY 2017 “Risk indicators for the financial market”.
- May 2017 - Scientist in charge of the project of spin-off “EasyRisk”: participant in the “Start Cup Emilia Romagna” competition 2017: final rank: 15<sup>th</sup> out of 127 projects.

## **AWARDS:**

2006 The paper: S. Muzzioli, H. Reynaerts, “Fuzzy linear systems of the form  $A1x+b1=A2x+b2$ ” Fuzzy Sets and Systems, 157, 7, 2006, 939-951 was ranked 19th on the list: Science Direct Top 25 hottest articles List for the journal Fuzzy Sets and Systems from October 2005 to March 2006 (<http://top25.sciencedirect.com/subject/engineering/12/journal/fuzzy-sets-and-systems/01650114/archive/6/>).

2000 University of Lausanne: “Prix de l’Association Vaudoise des Banques” for the Master’s Thesis.

### **MEMBERSHIPS:**

Present: AFA American Finance Association, FMA Financial Management Association, KERMIT Research Unit Knowledge-based Systems (<http://www.kermit.ugent.be>), AMASES Associazione per la Matematica Applicata alle Scienze Economiche e Sociali, CEFIN Centro Studi Banca e Finanza.

Past: MFA Midwest Finance Association, EFA European Finance Association, IFABS International Finance and Banking Society, FEBS Financial Engineering and Banking Society.

### **REFERENCES:**

Bernard De Baets, Department of Mathematical Modelling, Statistics and Bioinformatics, Ghent University, Belgium, [Bernard.DeBaets@UGent.be](mailto:Bernard.DeBaets@UGent.be).

Elyas Elyasiani, Fox School of Business and Management, Temple University, Philadelphia, PA, USA, [elyas@temple.edu](mailto:elyas@temple.edu).

Panayiotis Theodossiou, School of Management and Economics, Cyprus University of Technology, [p.theodossiou@cut.ac.cy](mailto:p.theodossiou@cut.ac.cy).

### **RESEARCH INTERESTS:**

Risk measurement and management

Risk transmission

Asset pricing

Volatility (and higher moments) modelling and forecasting

Derivatives pricing

Econometric modelling

Fuzzy sets and systems, fuzzy regression, fuzzy rule based classification systems

Big data in economics and finance

Machine learning

Measuring regional competitiveness, regional innovation,

LGBT+ inclusion in University

### **BIBLIOMETRY:**

Total citation report on 05/04/2024: 1361 (Google Scholar), 690 (Web of Science), 790 (Scopus)  
h-index: 18 (Google Scholar), 14 (Web of Science), 14 (Scopus).

### **SELECTED PUBLICATIONS:**

1. T. Russo, T. Addabbo, S. Muzzioli, F. Damiani, B. De Baets (2023) The LGBT plus University Inclusion Index and its application to Italian universities, *Soft Computing*, DOI 10.1007/s00500-023-08320-8.
2. G. Campisi., S. Muzzioli, B. De Baets, (2023). A comparison of machine learning methods for predicting the direction of the US stock market on the basis of volatility indices. *International Journal of Forecasting*, forthcoming.
3. L. Gambarelli, G. Marchi, S. Muzzioli (2023). Hedging effectiveness of cryptocurrencies in the European stock market. *Journal of International Financial Markets, Institutions and Money*, 84, 101757.
4. Muzzioli, S., Gambarelli, L., De Baets, B. (2020). "Option implied moments obtained through fuzzy regression". *Fuzzy Optimization and Decision Making*, 19, 211-238, 2020.
5. E. Elyasiani, L. Gambarelli, S. Muzzioli, "Moment risk premia and the cross-section of stock returns in the European stock market", *Journal of Banking and Finance*, 111, 2020.
6. F.G. Caloia, A. Cipollini, S. Muzzioli, "How do normalization schemes affect net spillovers? A replication of the Diebold and Yilmaz (2012) study", *Energy Economics*, 84, 2019.
7. S. Muzzioli, B. De Baets, "Fuzzy Approaches to option price modelling" *IEEE Transactions on Fuzzy Systems*, 25 (2), 2017, 392-401. (journal impact factor 6.701).
8. A. Cipollini, I. Lo Cascio, S. Muzzioli, "Volatility co-movements: a time scale decomposition analysis", *Journal of Empirical Finance*, 34, 2015, 34-44 (journal impact factor 0.907).
9. S. Muzzioli, A. Ruggieri, B. De Baets, "A comparison of fuzzy regression methods for the estimation of the implied volatility smile function", *Fuzzy Sets and Systems*, 2015, 131-143, doi:10.1016/j.fss.2014.11.015 (journal impact factor 2.098, n. of citations: Scopus 4, Web of Science 3).
10. S. Muzzioli, B. De Baets, "A comparative assessment of different fuzzy regression methods for volatility forecasting" *Fuzzy Optimization and Decision Making*, 12 (4), 2013, 433-450, DOI: 10.1007/s10700-013-9161-1 (journal impact factor 2.569, n. of citations: Scopus 3, Web of Science 2).
11. S. Muzzioli, "The information content of option based forecasts of volatility: evidence from the Italian stock market", *Quarterly Journal of Finance*, 3 (1), 2013, 1350005 (46 pages), DOI: 10.1142/S2010139213500055.
12. S. Muzzioli, "Option-based forecasts of volatility: An empirical study in the DAX-index options market" *European Journal of Finance*, 16 (6) 2010, 561-586 (journal impact factor 0.559, n. of citations: Scopus 10, Web of Science 7).
13. V. Moriggia, S. Muzzioli, C. Torricelli, "On the no arbitrage condition in option implied trees" *European Journal of Operational Research*, 193, 2009, 212-221 (journal impact factor 2.679, n. of citations: Scopus 4, Web of Science 3).
14. S. Muzzioli, H. Reynaerts, "The solution of fuzzy linear systems by non-linear programming: a financial application", *European Journal of Operational Research*, 177, 2007, 1218-1231 (journal impact factor 2.679, n. of citations: Scopus 27, Web of Science 24).
15. S. Muzzioli, H. Reynaerts, "Fuzzy linear systems of the form  $A_1x+b_1=A_2x+b_2$ " *Fuzzy Sets and Systems*, 157, 7, 2006, 939-951 (journal impact factor 2.098, n. of citations: Scopus 59, Web of Science 45).
16. S. Muzzioli, C. Torricelli, "A Multiperiod Binomial Model for Pricing Options in a Vague World" *Journal of Economic Dynamics and Control*, 28, 2004, 861-887 (journal impact factor 0.879, n. of citations: Scopus 32, Web of Science 32).
17. G. Facchinetti, R. Ghiselli Ricci, S. Muzzioli, "Note on ranking fuzzy triangular numbers", *International Journal of Intelligent Systems*, 13 (7), July 1998, 613-622 (journal impact factor 2.05, n. of citations: Scopus 137, Web of Science 105).

## COMPLETE LIST OF PUBLICATIONS:

### PAPERS IN REFEREED JOURNALS:

- 1 T. Russo, T. Addabbo, S. Muzzioli, F. Damiani, B. De Baets (2023) The LGBT plus University Inclusion Index and its application to Italian universities, *Soft Computing*, DOI: 10.1007/s00500-023-08320-8.
- 2 G. Campisi., S. Muzzioli, B. De Baets, (2023). A comparison of machine learning methods for predicting the direction of the US stock market on the basis of volatility indices. *International Journal of Forecasting, forthcoming*.
- 3 L. Gambarelli, G. Marchi, S. Muzzioli (2023). Hedging effectiveness of cryptocurrencies in the European stock market. *Journal of International Financial Markets, Institutions and Money*, 84, 101757.
- 4 G. Campisi, L. La Rocca, L., S. Muzzioli (2023). Assessing skewness in financial markets. *STATISTICA NEERLANDICA*, 77(1), 48-70.
- 5 G. Campisi, S. Muzzioli (2022). “Asymmetric semi-volatility spillover in a nonlinear model of interacting markets”. *International Mathematical Forum*, 17 (3), 117-127.
- 6 E. Elyasiani, S. Muzzioli (2022). “The power of deterministic option-implied trees in pricing European options”. *Applied Economics*, 54(22), 2596-2609.
- 7 F. Anceschi, Francesca, S. Muzzioli, S. Polidoro (2021). “Existence of a fundamental solution of partial differential equations associated to Asian options”, *Nonlinear Analysis: Real World Applications*, Nonlinear Analysis: Real World Applications, 62, 103373.
- 8 G. Campisi, S. Muzzioli, F. Tramontana, (2021). “Uncertainty about fundamental and pessimistic traders: a piecewise-linear maps approach”, *Decisions in Economics and Finance*, 44(2), 707-726.
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