Ioannis Vrontos

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CURRENT POSITION

02.2015 - **Associate Professor of Statistics**

Department of Statistics, Athens University of Economics and Business, Greece

PREVIOUS POSITIONS

07.2009 - 02.2015 **Assistant Professor of Statistics**

Department of Statistics, Athens University of Economics and Business, Greece

02.2004 - 07.2009 **Lecturer in Statistics**

Department of Statistics, Athens University of Economics and Business, Greece

09.2002 - 01.2004 **Temporary Lectureship in Statistics**

Department of Statistics, Athens University of Economics and Business, Greece

09.2001 - 01.2002 **Temporary Lectureship in Statistics**

Department of Statistics, Athens University of Economics and Business, Greece

04.2001 - 09.2001 **Researcher of Statistics**

Institute National de la Statistique et des Etudes Economiques (INSEE), Centre de Recherche en Economie et Statistique (CREST), Paris, France

09.2005 - 06.2008 **Adjunct Lecturer in Quantitative Methods**

Hellenic Open University, School of Social Sciences

EDUCATION

09.1997 - 02.2001 Department of Statistics, Athens University of Economics and Business, Greece, MCMC applications in time-varying volatility models, Ph.D. in Statistics

09.1995 - 09.1997	Department of Statistics, Athens University of Economics and Business, Greece, Bayesian Autoregressive Conditional Heteroscedasticity models, M.Sc. in Statistics
09.1991 - 06.1995	Department of Statistics, Athens University of Economics and Business, Greece, B.Sc. in Statistics

FELLOWSHIPS and AWARDS

2023 – 2024	Teaching award for extraordinary performance, M.Sc. in Quantitative Actuarial and Financial Risk Management, AUEB.
2022 – 2023	Teaching award for extraordinary performance, M.Sc. in Applied Statistics, AUEB.
2022 – 2023	Teaching award for extraordinary performance, M.Sc. in Statistics, AUEB.
2021 – 2022	Teaching award for extraordinary performance, M.Sc. in Business Economics with Analytics, AUEB.
2020 – 2021	Teaching award for extraordinary performance, B.Sc. Department of Statistics, AUEB.
2019 – 2020	Teaching award for extraordinary performance, M.Sc. in Management Science and Technology, AUEB.
2018 - 2019	Teaching award for extraordinary performance, M.Sc. in Management Science and Technology, AUEB.
2017 – 2018	Teaching award for extraordinary performance, M.Sc. in Management Science and Technology, AUEB.
1997 – 2001	Studentship during Ph.D. studies, PENED, Greece
1993 – 1994	Studentship for academic excellence in undergraduate studies, Department of Statistics, Athens University of Economics and Business, Athens, Greece

CONSULTING PROJECTS

1. Employer Branding: Construction and Development of a scale and a Rating Score using model-based approaches.
2. Modelling and predicting salary scale using statistical and econometric models and techniques.
3. Assessing Employer Satisfaction: A Model-based approach.
4. Estimating and evaluating the fair value of private companies (Private Company Valuation Framework).
5. Modelling and predicting NPS Level.
6. Modelling and predicting construction materials (i.e. cement, ceramic, marbles, granite).

7. Optimal Portfolio Construction based on Advanced Econometric Modelling Approaches.
8. Performance Evaluation of Mutual and Hedge Fund Investments.

RESEARCH PROJECTS AND GRANTS

Project Title	Funding source	Period	Role of the PI
Modelling the Economic and Financial Impact of COVID-19	Hellenic Foundation for Research and Innovation (ELIDEK)	2021-2023	Principal Investigator
A Bayesian Tree-structured quantile regression approach to financial series predictability	ELKE-AUEB	2019-2020	Principal Investigator
Bayesian Threshold Regression Models with Application to Economic and Financial Data	ELKE-AUEB	2017-2018	Principal Investigator
Quantile Autoregressions in Realised Volatility Prediction	ELKE-AUEB	2015-2017	Principal Investigator
Large Shocks, Structural Breaks and Macroeconomic Relationships	ARISTEIA-II, General Secretariat for Research and Technology, Greece	2014-2016	Member of the Research Team
Systemic Risk Tomography (SYRTO)	European Union, FP-7	2013-2016	Member of the Research Team
The Dark Side of The Accretion History of the Universe	Thales Program, European Commission, Greek National Resources	2012-2015	Member of the Statistical Research Team
Analysis of Financial time series using Bayesian non-parametric methods	ELKE-AUEB	2009	Principal Investigator
Asset-Liability Management for Pension Funds in a Time-Varying Volatility Environment	CKER SOA US	2008	Principal Investigator (joint with Spyridon Vrontos)

Hedge funds return predictability in the presence of model uncertainty and implications for wealth allocation	INQUIRE UK	2006	Principal Investigator (joint with Daniel Giamouridis)

PUBLICATIONS

1. Vrontos, I.D., Galakis, J., Panopoulou, E., and Vrontos, S.D. (2024). Modeling the Economic impact of the COVID-19 pandemic using Dynamic Panel Models and Seemingly Unrelated Regressions, Econometrics, 12:17.
2. Vrontos, I.D., Galakis, J., Panopoulou, E., and Vrontos, S.D. (2024). Forecasting GDP growth: The economic impact of COVID-19 pandemic, Journal of Forecasting, 43 (4), 1042-1086.
3. Galakis, J., Vrontos, I.D. and Xidonas, P. (2022). On tree-structured linear and quantile regression based asset pricing, Review of Accounting and Finance, 21 (3), 204-245.
4. Galakis, J., Vrontos, I.D., and Vrontos, S.D. (2021). Style Rotation Revisited, The Journal of Financial Data Science, 3 (2), 110-133.
5. Vrontos, S.D., Galakis, J. and Vrontos I.D. (2021). Implied Volatility Directional Forecasting: A Machine Learning Approach, Quantitative Finance, 21 (10), 1687-1706.
6. Vrontos, S.D., Galakis, J. and Vrontos I.D. (2021). Modeling and Predicting U.S. Recessions using Machine Learning Techniques, International Journal of Forecasting, 37 (2), 647-671.
7. Meligkotsidou L., Panopoulou, E., Vrontos I.D. and Vrontos S.D. (2021). Out-of-sample equity premium prediction: a complete subset quantile regression approach, European Journal of Finance, 27, 110-135.
8. Koki, C., Meligkotsidou, L. and Vrontos, I.D. (2020). Forecasting under model uncertainty: Non-homogeneous hidden Markov models with Polya-Gamma data augmentation, Journal of Forecasting, 39, 580-598.
9. Meligkotsidou L., Panopoulou, E., Vrontos I.D. and Vrontos S.D. (2019). Quantile forecast combinations in realised volatility prediction, Journal of the Operational Research Society, 70 (10), 1720-1733.
10. Meligkotsidou, L., Tzavalis E. and Vrontos I.D. (2017). On Bayesian Analysis and Unit Root Testing for Autoregressive Models in the Presence of Multiple Structural Breaks, Econometrics and Statistics, 4, 70-90.
11. Andersen, J.V., Vrontos, I.D., Dellaportas, P. and Galam, S. (2014). Communication impacting financial markets, Europhysics Letters, 108, 2, 28007-p1-p6.
12. Meligkotsidou L., Panopoulou, E., Vrontos I.D. and Vrontos S.D. (2014). A Quantile Regression Approach to Equity Premium Prediction, Journal of Forecasting, 33, 558-576.

13. Meligkotsidou L. and Vrontos I.D. (2014). Detecting Structural Breaks in Multivariate Financial Time Series: Evidence from Hedge Fund Investments, Journal of Statistical Computation and Simulation, 84, 5, 1115-1135.

14. Meligkotsidou L., Tzavalis E. and Vrontos I.D. (2014). A Bayesian method of distinguishing unit root from stationary processes based on panel data models with cross-sectional dependence, Statistics and Computing, 24, 297-315.

15. Vrontos S.D., Vrontos I.D. and Meligkotsidou L. (2013). Asset-Liability Management for Pension Funds in a Time-Varying Volatility Environment, Journal of Asset Management, 14, 306-333.

16. Meligkotsidou L., Tzavalis E. and Vrontos I.D. (2012). A Bayesian panel data framework for examining the economic growth convergence hypothesis: do the G7 countries converge?, Journal of Applied Statistics, 39, 9, 1975-1990.

17. Vrontos I.D. (2012). Evidence for Hedge Fund Predictability from a Multivariate Student's t Full Factor GARCH model, Journal of Applied Statistics, 39, 1295-1321.

18. Vrontos I.D., Meligkotsidou L. and Vrontos S.D. (2011). Performance Evaluation of Mutual Fund Investments: The impact of Non-Normality and Time-Varying Volatility, Journal of Asset Management, 12, 292-307.

19. Giannikis, D., and Vrontos I.D. (2011). A Bayesian approach to detecting nonlinear risk exposures in hedge fund strategies. Journal of Banking and Finance, 35, 1399-1414.

20. Meligkotsidou L., Tzavalis E. and Vrontos I.D. (2011). A Bayesian Analysis of Unit Roots and Structural Breaks in the Level, the Trend and the Error Variance of Autoregressive Models of Economic Series, Econometric Reviews, 30, 2, 208-249.

21. Diamantopoulos K. and Vrontos I.D. (2010). A Student-t Full Factor Multivariate GARCH model. Computational Economics, 35, 63-83.

22. Meligkotsidou L., Vrontos I.D. and Vrontos S.D. (2009). Quantile Regression Analysis of Hedge Fund Strategies. Journal of Empirical Finance, 16, 264-279.

23. Meligkotsidou L. and Vrontos I.D. (2008). Detecting Structural Breaks and Identifying Risk factors in Hedge Fund returns: A Bayesian approach. Journal of Banking and Finance, 32, 2471-2481.

24. Giannikis D., Vrontos I.D. and Dellaportas P. (2008). Modelling nonlinearities and heavy tails via threshold Normal mixture GARCH models, Computational Statistics and Data Analysis, 52, 1549-1571.

25. Vrontos S.D., Vrontos I.D. and Giamouridis D. (2008). Hedge fund pricing and model uncertainty, Journal of Banking and Finance, 32, 741-753.

26. Dellaportas P. and Vrontos I.D. (2007). Modelling Volatility Asymmetries: A Bayesian analysis of a class of tree structured multivariate GARCH models, Econometrics Journal, 10, 503-520.

27. Giamouridis D., and Vrontos I.D. (2007). Hedge fund portfolio construction: A comparison of static and dynamic approaches, Journal of Banking and Finance, 31, 199-217.

28. Vrontos I.D, Dellaportas P. and Politis D.N. (2003). A full-factor multivariate GARCH model. Econometrics Journal, 6, 312-334.
29. Vrontos I.D, Dellaportas P. and Politis D.N. (2003). Inference for some multivariate ARCH and GARCH models. Journal of Forecasting, 22, 427-446.
30. Vrontos I.D., Giakoumatos S.G., Dellaportas P. and Politis D.N. (2001). An application of three bivariate time-varying volatility models. Applied Stochastic Models in Business and Industry, 17, 121-133.
31. Vrontos I.D., Dellaportas P. and Politis D.N. (2000). Full Bayesian inference for GARCH and EGARCH models. Journal of Business and Economics Statistics, 18, 187-198.
32. Giakoumatos S.G., Vrontos I.D., Dellaportas P. and Politis D.N. (1999). An MCMC Convergence Diagnostic using Subsampling. Journal of Computational and Graphical Statistics, 8, 431-451.

Conference Proceedings

33. Vrontos I.D., Dellaportas P. and Politis D.N. (1999). Bayesian analysis of bivariate ARCH and GARCH models. Hercma '98: 4th Hellenic European Conference on Computer Mathematics and its applications, E.A. Lipitakis (Ed), pp. 459-466.

Working Papers

1. Apsemidis, A., Demiris, N., and Vrontos, I.D. (2024). Modeling Greek stock market during COVID-19 pandemic.
2. Vrontos, I.D., Galanis, I., and Angelis, M. (2024). Modeling and predicting U.S. Construction materials in the COVID era using Econometric models and Machine Learning Techniques.

CONFERENCES/WORKSHOPS

- Predictive Analytics in Macroeconomic and Financial Applications, AUEB Statistical Data Science & Economics Conference, August 2024, Aegina, Greece
- Modeling GDP growth: the Economic impact of the COVID-19 pandemic using Regression and Dynamic Panel Models, International Conference on Economic and Financial Impact of COVID-19, July 2023, Athens, Greece
- 18th Conference on Research on Economic Theory and Econometrics, July 2019, Tinos, Greece
- 17th Conference on Research on Economic Theory and Econometrics, July 2018, Tinos, Greece
- 16th Conference on Research on Economic Theory and Econometrics, Bayesian Inference and Variable Selection for Predictive Non-Homogeneous Hidden Markov Models, July 2017, Milos, Greece
- 15th Conference on Research on Economic Theory and Econometrics, Quantile Forecast Combinations in Realized Volatility Prediction, July 2016, Tinos, Greece
- 14th Conference on Research on Economic Theory and Econometrics, Risk Dynamics in the Eurozone: A New Factor Model for Sovereign CDS and Equity Returns, July 2015, Chania, Greece

- 16th Conference of the Applied Stochastic Models and Data Analysis (ASMDA2015) International Society, Risk Dynamics in the Eurozone: A New Factor Model for Sovereign CDS and Equity Returns, July 2015, Piraeus, Greece
- European Financial Management Association 2015 Annual Conference, A Dynamic Factor Model: Inference and Empirical Application, June 2015, Breukelen, Netherlands
- ARISTEIA II conference meeting: Large Shocks, Structural Breaks and Macroeconomic Relationships, Bayesian Inference and Variable Selection for Predictive Non-Homogeneous Hidden Markov Models, June 2015, Athens, Greece
- 10th Conference on Research on Economic Theory and Econometrics, Detecting Structural Breaks in Multivariate Financial Time Series, July 2011, Milos, Greece
- 5th CSDA International Conference on Computational and Financial Econometrics (CFE'11), Bayesian Analysis of Autoregressive Models with Multiple Structural Breaks, December 2011, London, UK
- 9th Conference on Research on Economic Theory and Econometrics, Stock Return Predictability: The effects of initial Condition, Heteroscedasticity, Fat tails and Parameter Uncertainty, July 2010, Tinos, Greece
- 42nd Annual Conference of the Money, Macro and Finance Research Group, A Bayesian Panel Data Unit Root Test: Re-examining the Economic Convergence Hypothesis, September 2010, Cyprus
- 8th Conference on Research on Economic Theory and Econometrics, Bayesian Analysis of Autoregressive Models with Multiple Structural Breaks, July 2009, Tinos, Greece
- 3rd International Conference on Computational and Financial Econometrics, Evidence for Hedge Fund Predictability from a multivariate Student-t Full-Factor GARCH Model, 2009, Limassol. Cyprus
- 1st Athens-Pavia Meeting on Statistics, Model uncertainty and Hedge fund return predictability, 2008, Athens, Greece
- 1st International Workshop of the ERCIM Working Group on Computing and Statistics, Detecting Structural Breaks in Multivariate Financial Time Series: Evidence from Hedge Fund Investment Strategies, 2008, Neuchatel, Switzerland
- International Workshop on Computational and Financial Econometrics, Hedge Fund return predictability in the presence of estimation risk and model uncertainty, April 2007, Geneva, Switzerland
- ISBA Eight world meeting on Bayesian Statistics, A Bayesian Analysis of Unit Roots and Structural breaks in the Level and the Error Variance of Autoregressive Models, June 2006, Benidorm (Alicante), Spain
- 12th International Conference on Computing in Economics and Finance, Evaluating Hedge Fund managers: A Bayesian investigation of skill and performance, June 2006, Limassol, Cyprus
- 5th Annual Conference - Hellenic Finance and Accounting Association (H.F.A.A.) on Finance and Accounting, Hedge Fund pricing and model uncertainty, December 2006, Thessaloniki, Greece
- Advances in Financial Forecasting, 2nd International Symposium at the 2005 International Conference of Computational Methods in Sciences and Engineering, Hedge fund pricing and portfolio choice in a Dynamic approach, October 2005, Loutraki, Greece

MEMBERSHIPS & REVIEWING ACTIVITIES

2005 – 2024	Referee for the Journal of Econometrics, Journal of Applied Econometrics, Journal of Financial Econometrics, Journal of Banking and Finance, Journal of Empirical Finance, Journal of Time Series Analysis, Statistics and Computing, International Journal of Forecasting, Journal of Statistical Planning and Inference, Journal of Computational

MEMBERSHIPS & REVIEWING ACTIVITIES

Statistics and Data Analysis, Journal of Applied Statistics, Mathematics and Computers in Simulation, Journal of Financial Research

2009 - 2020	Evaluator/Member of the Ph.D. Committees for six Ph.D. students
2008	Member of the Scientific Program Committee of the First International Workshop of the ERCIM Working Group on Computing and Statistics, June 2008, Neuchatel, Switzerland
2009	Member of the Scientific Program Committee of the Second International Workshop of the ERCIM Working Group on Computing and Statistics, October 2009, Limassol, Cyprus
2011	Member of the Scientific Program Committee of the Fifth CSDA International Conference on Computational and Financial Econometrics (CFE'11), December 2011, London, UK

TEACHING ACTIVITIES

2024 – 2025	Module Leader - Econometrics, Introduction to R Programming, Time Series Analysis (B.Sc., Dept. of Statistics), Financial Econometrics, Introduction to Statistics, Business Statistics (M.Sc., Dept. of Management Science & Technology), Probability and Statistics for Data Analysis, Time Series and Forecasting Methods (M.Sc., Dept. of Informatics), Introduction to Statistics, Quantitative Methods (M.Sc., Dept. of Economics), Athens University of Economics and Business
2023 – 2024	Module Leader - Generalized Linear Models, Econometrics, Time Series Analysis (B.Sc., Dept. of Statistics), Financial Econometrics, Linear Models, Time Series Analysis and Forecasting with R, Optimization Techniques and Portfolio Theory (M.Sc., Dept. of Statistics), Introduction to Statistics, Business Statistics (M.Sc., Dept. of Management Science & Technology), Probability and Statistics for Data Analysis, Time Series and Forecasting Methods (M.Sc., Dept. of Informatics), Introduction to Statistics, Quantitative Methods (M.Sc., Dept. of Economics), Athens University of Economics and Business
2022 – 2023	Module Leader - Generalized Linear Models, Econometrics, Introduction to R Programming, Time Series Analysis (B.Sc., Dept. of Statistics), Financial Econometrics, Linear Models, Time Series Analysis and Forecasting with R, Optimization Techniques and Portfolio Theory (M.Sc., Dept. of Statistics), Introduction to Statistics, Business Statistics (M.Sc., Dept. of Management Science & Technology), Probability and Statistics for Data Analysis, Time Series and Forecasting Methods (M.Sc., Dept. of Informatics), Introduction to Statistics, Quantitative Methods (M.Sc., Dept. of Economics), Athens University of Economics and Business

2021 – 2022	Module Leader - Generalized Linear Models, Econometrics, Introduction to R Programming, Time Series Analysis (B.Sc., Dept. of Statistics), Financial Econometrics, Linear Models, Time Series Analysis and Forecasting with R, Optimization Techniques and Portfolio Theory (M.Sc., Dept. of Statistics), Business Statistics (M.Sc., Dept. of Management Science & Technology), Probability and Statistics for Data Analysis, Time Series and Forecasting Methods (M.Sc., Dept. of Informatics), Quantitative Methods (M.Sc., Dept. of Economics), Athens University of Economics and Business
2020 – 2021	Module Leader - Generalized Linear Models, Econometrics, Introduction to R Programming, Time Series Analysis (B.Sc., Dept. of Statistics), Financial Econometrics, Time Series Analysis and Forecasting with R, Optimization Techniques and Portfolio Theory (M.Sc., Dept. of Statistics), Business Statistics (M.Sc., Dept. of Management Science & Technology), Probability and Statistics for Data Analysis, Time Series and Forecasting Methods, Advanced Econometric Models for Finance (M.Sc., Dept. of Informatics), Athens University of Economics and Business
2019 – 2020	Module Leader - Generalized Linear Models, Econometrics (B.Sc., Dept. of Statistics), Business Statistics (M.Sc., Dept. of Management Science & Technology), Probability and Statistics for Data Analysis, Time Series and Forecasting Methods (M.Sc., Dept. of Informatics), Athens University of Economics and Business
2018 – 2019	Module Leader - Generalized Linear Models, Time Series (B.Sc., Dept. of Statistics), Financial Econometrics, Bayesian Statistics, Time Series Analysis, Statistical Applications (M.Sc., Dept. of Statistics), Numerical Methods (Ph.D., Dept. of Statistics), Business Statistics (M.Sc., Dept. of Management Science & Technology), Probability and Statistics for Data Analysis, Time Series and Forecasting Methods (M.Sc., Dept. of Informatics), Athens University of Economics and Business
2017 – 2018	Module Leader - Generalized Linear Models, Time Series (B.Sc., Dept. of Statistics), Financial Econometrics, Bayesian Statistics, Time Series Analysis, Statistical Applications (M.Sc., Dept. of Statistics), Numerical Methods (Ph.D., Dept. of Statistics), Business Statistics (M.Sc., Dept. of Management Science & Technology), Probability and Statistics for Data Analysis, Time Series and Forecasting Methods, Advanced Econometric Models for Finance (M.Sc., Dept. of Informatics), Athens University of Economics and Business
2016 – 2017	Module Leader - Econometrics, Time Series (B.Sc., Dept. of Statistics), Financial Econometrics, Time Series Analysis, Linear Models (M.Sc., Dept. of Statistics), Business Statistics (M.Sc., Dept. of Management Science & Technology), Probability and Statistics for Data Analysis, Time Series and Forecasting Methods, Bayesian Methods (M.Sc., Dept. of Informatics), Athens University of Economics and Business
2015 – 2016	Module Leader – Probabilities I, Time Series (B.Sc., Dept. of Statistics), Financial Econometrics, Time Series Analysis, Computational Statistics, Non-parametric Statistics (M.Sc., Dept. of Statistics), Athens University of Economics and Business

2014 – 2015 Module Leader – Applications of Statistical Models to Finance, Time Series, Applied Econometrics, Non-parametric Statistics (B.Sc., Dept. of Statistics), Financial Econometrics, Time Series Analysis (M.Sc., Dept. of Statistics), Athens University of Economics and Business

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2005-2008 >20, Master Students Thesis, Department of Economics, Athens University of Economics and Business

2005-2021 >45, Master Students Thesis, Department of Statistics, Athens University of Economics and Business

2018-2021 3, Master Students Thesis, Department of Informatics, Athens University of Economics and Business

2013-2021 3, Ph.D. Students, Department of Statistics, Athens University of Economics and Business

OTHER

Ioannis Vrontos, has conducted extensive research on financial time series analysis and on the development and application of novel complex econometric models to economic and financial data. His research has been published in world-leading peer-reviewed scientific journals, such as the Journal of Business and Economic Statistics, Econometrics Journal, Journal of Banking and Finance, Journal of Empirical Finance, European Journal of Finance, Statistics and Computing, among others. He has participated in several research projects and grants either as a member of the research team, as a co-principal investigator, or as a principal investigator. He has been invited to present and conduct modules and Ph.D. short courses at the University of Essex, and at the University of Leeds.