J. Eduardo Vera-Valdés

Associate Professor

Department of Mathematical Sciences, Aalborg University | eduardo@math.aau.dk | https://everval.github.io

Education

- **PhD in Econometrics** | Center for Research in Econometrics and Time Series Analysis (*CREATES*) | Aarhus, Denmark | 2013-2016
  - Download my PhD thesis here, watch the defence here, and follow the discussion along downloading the presentation here.
- **MSc in Economics** | Center for Research and Teaching in Economics (*CIDE*) | Mexico City, Mexico | 2008-2010
- **BSc in Mathematics** | Center for Research in Mathematics (*CIMAT*) | Guanajuato, Mexico | 2002-2007

Experience

- **Associate Professor** | Aalborg University | Sep 2020 - present
  - **Leader of the Group for Research in Econometrics And Time Series (GREAT)**
  - **Associate of the Center for Research in Energy: Economics and Markets (CoRE)**
  - **Research Fellow at the Danish Finance Institute (DFI)**
- **Assistant Professor** | Aalborg University | Sep 2017 - Aug 2020
- **Research Assistant** | Aalborg University | Jul - Aug 2017
- **Research Assistant** | Aarhus University and CREATES | Sep - Nov 2016, Jan - Mar 2017
- **Assistant Professor** | University of Guanajuato | Aug 2012 - Jul 2013
- **Economist** | Mexico's Central Bank | Aug 2010 - Jul 2012

Publications

Journal Articles

- 2026. **J.E. Vera-Valdés**. *Detecting acceleration in global mean temperature using supralinear trends.* Environmental Research Letters.
- 2026. O. Kvist and **J.E. Vera-Valdés**. *The Effect of Climate News on Green and Brown Energy Stocks: A High-Frequency Analysis.* Applied Finance Letters.
- 2026. **J.E. Vera-Valdés** and O. Kvist. *Breaching 1.5°C: Give me the odds.* International Journal of Forecasting.
- 2026. O. Kvist and **J.E. Vera-Valdés**. *The Effect of CEO Public Behaviour on the Company's Valuation: The Case of Tesla and Elon Musk.* Applied Economics Letters.
- 2026. M. Schaffer, **J.E. Vera-Valdés** and A. Marszal-Pomianowska. *Non-intrusive hourly occupancy detection in residential buildings using remotely readable water meter data: Validation and large-scale analysis.* Building and Environment.
- 2025. **J.E. Vera-Valdés**. *LongMemory.jl: Generating, Estimating, and Forecasting Long Memory Models in Julia.* Journal of Open Source Software.
- 2025. **J.E. Vera-Valdés** and C. Grivas. *Robust Estimation of the Carbon Dioxide Airborne Fraction Under Measurement Errors.* Environmental Research Communications.

- 2024. M. Schaffer, **J.E. Vera-Valdés** and A. Marszal-Pomianowska. *Exploring Smart Heat Meter Data: A Co-Clustering Driven Approach to Analyse the Energy Use of Single-Family Houses*. Applied Energy.
- 2024. M. Schaffer, J. Widen, **J.E. Vera-Valdés**, A. Marszal-Pomianowska and T.S. Larsen. *Disaggregation of Total Energy Use Into Space Heating and Domestic Hot Water: A City-Scale Suited Approach*. Energy.
- 2023. **J.E. Vera-Valdés** and C.V. Rodríguez-Caballero. *Air Pollution And Mobility In The Mexico City Metropolitan Area In Times of COVID-19*. Atmósfera.
- 2022. **J.E. Vera-Valdés**. *The Persistence of Financial Volatility After COVID-19*. Finance Research Letters.
- 2021. **J.E. Vera-Valdés**. *Nonfractional Long-Range Dependence: Long Memory, Antipersistence, and Aggregation*. Econometrics.
- 2021. C.V. Rodríguez-Caballero and **J.E. Vera-Valdés**. *Air Pollution and Mobility, What Drives COVID-19?*. Econometrics.
- 2021. **J.E. Vera-Valdés**. *Temperature Anomalies, Long Memory, and Aggregation*. Econometrics.
- 2021. **J.E. Vera-Valdés**. *The Political Risk Factors of COVID-19*. International Review of Applied Economics.
- 2020. Rodríguez-Caballero, C.V. and **J.E. Vera-Valdés**. *Long-Lasting Economic Effects of Pandemics: Evidence on Growth and Unemployment*. Econometrics.
- 2020. D. Ventosa-Santaulària, **J.E. Vera-Valdés**, K. Lasak and R. Ramírez-Vargas. *Spurious Multivariate Regressions Under Fractionally Integrated Processes*. Communications in Statistics - Theory and Methods.
- 2020. **J.E. Vera-Valdés**. *On Long Memory Origins and Forecast Horizons*. Journal of Forecasting.
- 2018. D. Osterrieder, D. Ventosa-Santaulària and **J.E. Vera-Valdés**. *The VIX, the Variance Premium, and Expected Returns*. Journal of Financial Econometrics.
- 2017. N. Haldrup and **J.E. Vera-Valdés**. *Long Memory, Fractional Integration, and Cross-Sectional Aggregation*. Journal of Econometrics.
- 2016. D. Ventosa-Santaulària, **J.E. Vera-Valdés** and A.I. Martínez-Olmos. *A Comment on 'Resolving Spurious Regressions and Serially Correlated Errors'*. Empirical Economics.
- 2012. B. Martínez-Rivera, D. Ventosa-Santaulària and **J.E. Vera-Valdés**. *Spurious Forecasts?*. Journal of Forecasting.
- 2012. R. Fernández, **J.E. Vera-Valdés** and F. Venegas-Martínez. *Real Business Cycles in Emerging Economies: The Role of International Growth and Interest Rate*. Investigación Económica.
- 2008. D. Ventosa-Santaulària and **J.E. Vera-Valdés**. *Granger-Causality in the Presence of Structural Breaks*. Economics Bulletin.

Book Chapters

- 2026. **J.E. Vera-Valdés** and O. Kvist. *Effects of the Paris Agreement and the COVID-19 Pandemic on Volatility Persistence of Stocks Associated with the Climate Crisis: A Multiverse Analysis*. Advances in Econometrics.
- 2013. R. Fernández and **J.E. Vera-Valdés**. *Simulation Analysis as a Way to Assess the Performance of Important Unit Root and Change in Persistence Tests*. Simulation in Computational Finance and Economics: Tools and Emerging Applications.

Conference Proceedings

- 2023. M. Schaffer, A.R. Hansen, **J.E. Vera-Valdés** and A. Marszal-Pomianowska. *Analysing Energy Use Clusters of Single-Family Houses Using Building and Socio-Economic Characteristics*. Journal of Physics: Conference Series.
- 2023. M. Schaffer, D. Leiria, **J.E. Vera-Valdés** and A. Marszal-Pomianowska. *Increasing the Accuracy of Low-Resolution Commercial Smart Heat Meter Data and Analysing its Error*. European Conference on Computing in Construction.

Reports

- 2025. M. Pomianowski, C.K. Langeland, C.H. Christiansen, **J.E. Vera-Valdés**, M. Schaffer, M.K. Rasmussen and A. Marszal-Pomianowska. *District Heating Meets Smart Heat Meter Data: Can We Diagnose Buildings and Substations?*. REHVA Report.

Working Papers

- 2026. O. Kvist and **J.E. Vera-Valdés**. *Cointegration by Parts: Locating Cointegration in Time*. arXiv.
- 2026. M. Bennedsen and **J.E. Vera-Valdés**. *The Kinematics of Global Warming: Semiparametric Analysis of Warming Level, Rate, and Acceleration*. arXiv.
- 2026. T.K. Bugajski, N.P.B. Pedersen and **J.E. Vera-Valdés**. *Spatial Emergence of Acceleration in Global Warming*. arXiv.
- 2026. **J.E. Vera-Valdés**. *Leveraging Multi-Model Land-Use Emissions Reveals a Rising Airborne Fraction of Atmospheric CO2 Over the Past Six Decades*. arXiv.
- 2026. **J.E. Vera-Valdés**. *Global Temperature Anomalies in Practice*. EarthArXiv.
- 2025. N.P.B. Pedersen, T.K. Bugajski, **J.E. Vera-Valdés**, S.H. Casper, M.H. Jensen, P. Vestergaard and T. Kronborg. *Daily Rhythms in Blood Glucose: Time-of-Day Forecasts in Type 2 Diabetes*. medRxiv.

Software

- Replication code for Detecting acceleration in global mean temperature using supralinear trends (Julia). Replication code for the paper Detecting acceleration in global mean temperature using supralinear trends. Available at Zenodo and the GitHub repository.
- Code for Spatial emergence of acceleration in global warming (Python). Analysis code for the paper Spatial emergence of acceleration in global warming. Fits Bayesian quadratic temperature models to gridded datasets (HadCRUT5, NOAAGlobalTemp, ERA5) using Gibbs samplers, with spatial interpolation and threshold-exceedance summaries. Available at the GitHub repository.
- Replication code for Explaining the disagreement over a rising CO_2 airborne fraction (Julia). Replication code for airborne fraction trend estimation using uncertainty-derived weights. Available at Zenodo and the GitHub repository.
- Quarto manuscript for Leveraging Multi-Model Land-Use Emissions Reveals a Rising Airborne Fraction of Atmospheric CO2 Over the Past Six Decades (Julia). A Quarto manuscript that provides an overview of the methods and results from the paper Leveraging Multi-Model Land-Use Emissions Reveals a Rising Airborne Fraction of Atmospheric CO2 Over the Past Six Decades.
- Econometrics with Julia (Julia). A Quarto book that introduces econometrics using the Julia programming language.
- SimT2D.jl (Julia). A package for simulating type 2 diabetes data in Julia.
- Quarto notebook to obtain Global Temperature Anomalies data. (Julia). A Quarto notebook to obtain global temperature anomalies data from the most used datasets (HadCRUT5, GISTEMP, Berkeley Earth, and NOAA). The notebook computes temperature anomalies relative to the pre-industrial period (1850-1900) and provides plots of the data.
- Dashboard for Breaching 1.5°C: Give me the odds (Julia). A dashboard that provides continuously updated results from the paper Breaching 1.5°C: Give me the odds.
- Quarto manuscript for Robust Estimation of the Carbon Dioxide Airborne Fraction Under Measurement Errors (Julia). A Quarto manuscript with the methods and results from the paper Robust Estimation of the Carbon Dioxide Airborne Fraction Under Measurement Errors.Quick access to the replication notebook here.
- LongMemory.jl (Julia). A package for time series long memory modelling in Julia.
- Quarto manuscript for Breaching 1.5°C: Give me the odds (Julia). A Quarto manuscript that provides an overview of the methods and results from the paper Breaching 1.5°C: Give me the odds. Replication codes and data are available at the GitHub repository here. The archived replication package is available at Zenodo.
- Replication notebook for A regression-based approach to the CO2 airborne fraction. (Julia). A Quarto notebook that replicates the results from the paper.
- Replication codes for Effects of the Paris Agreement and the COVID-19 Pandemic on Volatility Persistence of Stocks Associated with the Climate Crisis: A Multiverse Analysis (Julia). Replication codes for the paper.

- MICE Illustration (R). A notebook that illustrates the use of the MICE package for multivariate imputation by chained equations in R.
- Time Series Exercise (R). A notebook that provides an exercise on time series decomposition and forecasting using exponential smoothing and the Holt-Winters model in R.

Talks

- 02/03/2026. *Global Warming Acceleration: Is Temperature Rising Faster Than Linearly?*. Aarhus University Econometrics Seminar, Aarhus University, Denmark.
- 27/08/2025. *Global Temperature Acceleration in a World with Long Memory*. Econometric Models of Climate Change 2025 Conference, University of Victoria, Canada.
- 22/04/2025. *Breaching 1.5°C: Give me the odds*. Climate Econometrics Virtual Seminar, University of Oxford.
- 01/08/2024. *The Story of 1.5°C: Obtaining the Probability of Breaching the Goals of the Paris Agreement Using Long Memory Models*. Econometric Models of Climate Change 2024 Conference, University of Cambridge, United Kingdom.
- 01/08/2023. *The effect of the Paris Agreement and the COVID-19 pandemic on the volatility persistence of brown and green stocks*. Econometric Models of Climate Change 2023 Conference, Vrije Universiteit Amsterdam.
- 01/06/2023. *The effect of the Paris Agreement and the COVID-19 pandemic on the volatility persistence of brown and green stocks*. International Association for Applied Econometrics Annual Conference, BI Norwegian Business School.
- 01/05/2022. *The Difference-in-Variance Test for Asymmetry*. Statistics Department Seminar Series, Instituto Tecnológico Autónomo de México (ITAM).
- 01/12/2021. *The Economic and Financial Repercussions of COVID-19*. World Pandemic Network 2021 Conference, .
- 01/05/2019. *Nonfractional Memory: Filtering, Antipersistence, and Estimation*. 10th Nordic Econometric Meeting, Stockholm University.
- 01/06/2018. *Nonfractional Memory: Filtering, Antipersistence, and Forecasting*. International Association for Applied Econometrics Annual Conference, Université du Québec à Montréal.
- 01/06/2018. *Nonfractional Memory: Filtering, Antipersistence, and Forecasting*. Long Memory Conference, Aalborg University.
- 01/12/2017. *Long Horizon Forecasts*. 11th Computational and Financial Econometrics Conference, University of London.
- 01/02/2017. *Forecasting Long Memory Processes with the ARFIMA Model*. Applied Economics Department Seminar, University of the Balearic Islands.
- 01/01/2017. *Forecasting Long Memory Processes with the ARFIMA Model*. Statistics Department Seminar, Carlos III University of Madrid.
- 01/06/2016. *Long Memory, Fractional Integration, and Cross-Sectional Aggregation*. International Association for Applied Econometrics Annual Conference, University of Milano-Bicocca.
- 01/04/2016. *Unbalanced Regressions and the Predictive Equation*. Royal Economic Society Annual Conference, University of Sussex.
- 01/03/2016. *Long Memory and Cross-Sectional Aggregation*. PhD Lunch Seminar Rotterdam, Erasmus University Rotterdam and Tinbergen Institute.
- 01/03/2016. *Unbalanced Regressions and the Predictive Equation*. Econometric Institute Research Meeting, Erasmus University Rotterdam and Tinbergen Institute.
- 01/11/2015. *Long Memory and Cross-Sectional Aggregation*. DGPE Workshop, Sandbjerg Gods.
- 01/10/2015. *Long Memory and Cross-Sectional Aggregation*. CREATES Lunch Seminar, Aarhus University and CREATES.
- 01/10/2015. *Long Memory and Cross-Sectional Aggregation*. 4th Long Memory Symposium, Aarhus University and CREATES.

- 01/05/2015. *Unbalanced Regressions and the Predictive Equation.* 8th Nordic Econometric Meeting, University of Helsinki.
- 01/12/2014. *Unbalanced Regressions and the Predictive Equation.* CREATES Lunch Seminar, Aarhus University and CREATES.
- 01/10/2009. *Spurious Forecasts?.* XLII Congress of the Mexican Mathematical Society, .
- 01/10/2008. *Granger-Causality in the Presence of Structural Breaks.* Mexican Colloquium of Mathematical Economics and Econometrics, .
- 01/05/2008. *Granger-Causality in the Presence of Structural Breaks.* XLI Congress of the Mexican Mathematical Society, .

Grants and Awards

- Danish Data Science Academy (DDSA) Large Events Grant to the organization of the 2026 Conference on Econometric Models of Climate Change (EMCC-X)
- The Carlsberg Foundation Grant for the organization of the 2026 Conference on Econometric Models of Climate Change (EMCC-X)
- Danish Data Science Academy (DDSA) Small Events Grant to the organization of Earth Day 2026
- Danish Data Science Academy (DDSA) Grant to the organization of the 2026 Conference on Econometric Models of Climate Change (EMCC-X)
- Danish Data Science Academy (DDSA) Grant to the organization of Earth Day 2025
- Danish Data Science Academy (DDSA) Grant to the organization of Earth Day 2024
- Danish Data Science Academy (DDSA) Grant for the formation of JUGA: Julia Users Group Aalborg
- Danish Data Science Academy (DDSA) Grant to the organization of Earth Day 2023: *The Use of Data Science to Combat Global Heating*
- The Carlsberg Foundation Grant for the organization of the 2018 Long Memory Conference
- Independent Research Fund Denmark (IRFD) International Postdoctoral Grant
- National Council of Science and Technology (CONACYT) Fellowship for Graduate Studies
- Center for Mathematical Research (CIMAT) Fellowship for Undergraduate Studies

Supervision

PhD Thesis

- 2026. *Quantifying Climate Change Through Econometrics: Methods, Risks, and Responses.* Olivia My Tøffner Kvist.
- 2025. *Using Large-Scale Building Characteristics and Remotely Readable Water and Heat Meter: Proofs of Concept for Gaining Insights into Single-Family Houses.* Markus Schaffer.

Master Thesis

- 2026. *SimT2D: A Behavioural-Physiological Simulator for Type 2 Diabetes Glucose Traces. A Stochastic Framework for Interpretable Data Generation.* Tanja Kortsen Bugajski.
- 2026. *Modelling Electricity Prices in 15-Minute Intervals: A Panel Data Approach.* Andreas Laurids Pedersen and Elissa Kamil Yammin.
- 2026. *The Impact of Variable Renewable Energy Sources Forecast Errors on Electricity Price Spreads and Asymmetric Volatility Dynamics.* Marcus Basse.
- 2026. *Analysis of Imbalance Price Dynamics in the Danish Balancing Market.* Frederik Dyrup Revsbech.
- 2025. *LSTM-Based Forecasting of Danish Electricity Imbalance Price.* Christian Taulbjerg Gørup Christiansen.
- 2024. *High Frequency Jump Tests.* Asim Hodzic.

- 2024. *Event Study: A High-Frequency Approach.* Olivia My Tøffner Kvist.
- 2023. *Financial Modelling with Copulas: Model Selection for Risk Management.* Rasmus Rosted Nørrevang and Sebastian Søndergaard Kure.
- 2022. *Predicting Probability of Default Using Advanced Machine Learning Methods.* Jonas Brunholm Jensen.
- 2022. *Copulas and Value-at-Risk: Risk Estimation of Portfolios.* Henriette Rønfeldt Pedersen, Charlotte Kargo Lauridsen and Thea Lund Jørgensen.
- 2022. *The Effect of Climate Change on Volatility Indices for the S&P500 Index Modelled by Machine Learning Methods.* Mathilde Bach, Signe Denhardt Brandt Nielsen and Lise Lønsmann Nielsen.
- 2021. *On the Feasibility of Trading Electricity Futures with LSTM Networks.* Jonathan Strandberg.
- 2021. *Energy Trading: A Neural Network Approach.* Magnus Birkernose Nordam.
- 2019. *Parameter Testing in Roof Constructions.* Tobias Olsson.
- 2019. *Cross-Border Energy Trading in Australia.* Jeppe Egede Skjoldahl.
- 2019. *The Effect of Climate Change on Gross Domestic Product per Capita.* Ann-Katrine Kjærsgaard Nielsen.
- 2018. *On Machine Learning Based Cryptocurrency Trading.* William Geneser Bach and Kasper Lindblad Nielsen.

Bachelor Thesis

- 2026. *Utility Theory and the Capital Asset Pricing Model: A Mathematical Derivation.* Mikkel Albeck-Madsen.
- 2025. *Cointegration Analysis and Forecasting of Electricity Demand.* Jens Fjordbak Reuss Iversen.
- 2025. *Financial Bubbles.* Niklas Thorgaard Sørensen, Magnus Toft Høj and Nicolai Kjær Johannesen.
- 2025. *Financial Bubbles.* Simon Tresor Ngabo, Jens Adam Geisler Krogsgaard and Emilie Wilki Birch.
- 2025. *Long Memory in Volatility.* Mads Joachim Staunstrup, Mia Larsen, Amalie Sloth Vestergaard and Willi Wang.
- 2024. *Predictive Analysis of Gas Dynamics Using VAR Models.* Amalie Egholm Bjerrum.
- 2022. *Modelling and Forecasting of Elspot Prices.* Mathias Strøm Pedersen, Ageshan Manoharan, Dennis Birkvald Otto, Nicolai Hellebek and Rasmus Kristian Jensen.
- 2021. *Efficiency of Bitcoin.* Louise Neema Krog Pedersen, Kirstine Lykke Sørensen and Olivia My Tøffner Kvist.
- 2021. *Time Series Analysis: Application of ARIMA Models and HMMs to Bitcoin.* Nick Kruse.
- 2021. *The Efficiency of Bitcoin: Time Series Analysis Modelling of the Efficient Market Hypothesis.* Mads Bjørn Madsen, Helge McGough, Kristín Helgadóttir, Lau Roed Aver and Frederick Alexander Bue Nygaard.
- 2021. *Efficiency of Bitcoin.* Jacob Qazizada and Jacob Høeg Tranum Laursen.
- 2018. *Forecasting Electricity Prices.* Mathias Tokkesdal Henriksen, Thomas Mortensen, Toke Christian Zinn and Morten Andersen.

Teaching

- **Aalborg University**

  Graduate and Undergraduate Courses, PhD in the Faculty of Engineering, MSc and BSc in Mathematics-Economics, BSc in Business Economics, MSc in Operations Management

  - Version Control (IT System Development) [MSc] (Lecturer, 2026-)
  - Missing Data and Imputation Methods [PhD] (Lecturer, 2023-)
  - Do's and Don'ts of Statistics in Research [PhD] (Lecturer, 2024-)
  - Computational Statistics [MSc] (Lecturer, 2025-)
  - Econometrics [MSc] (Lecturer, 2019-)
  - Time Series Analysis [MSc] (Lecturer, 2024-2026)
  - Financial Markets [BSc] (Lecturer, 2023-)
  - Statistical Learning [MSc] (Lecturer, 2018-2022)
  - Advanced Operations Management [MSc] (Lecturer, 2017-2025)
  - Applied Quantitative Methods [MSc] (Lecturer, 2021)
  - Data-Driven Business Development [MSc] (Lecturer, 2020)

- Financial Econometrics [MSc] (Lecturer, 2018)
- Topics in Statistical Sciences I [MSc] (Lecturer, 2018)

- **Aarhus University**

  Undergraduate Courses, BSc in Economics

  - Econometrics I [BSc] (Teaching Assistant, 2014-2015)
  - Programming in Quantitative Economics [BSc] (Teaching Assistant, 2015)

- **University of Guanajuato**

  Graduate and Undergraduate Courses, MSc and BSc in Economics

  - Econometrics I [BSc] (Lecturer, 2013)
  - Econometrics II [BSc] (Lecturer, 2013)
  - Time Series [BSc] (Lecturer, 2012)
  - Microeconometrics [MSc] (Lecturer, 2012)
  - Dynamic Optimization [BSc] (Teaching Assistant, 2006)

- **Centre for Research and Teaching in Economics (CIDE)**

  Undergraduate Courses, BSc in Economics

  - Econometrics I [BSc] (Teaching Assistant, 2012)
  - Mathematics IV [BSc] (Teaching Assistant, 2009).