

Orlando Joaqui Barandica

PHD

www.joaquibarandica.com

✉ orlando.joaqui@correounivalle.edu.co | ☎ 0000-0001-8190-0518 | in [orlando-jr-joaqui](#)

About me

- I'm a Ph.D. in Engineering with a focus on Industrial Engineering from Universidad del Valle, where I also earned my degrees in Statistics and Applied Economics. Currently, I'm an assistant professor at Universidad del Valle, where I lead courses in statistics, econometrics, business analytics, machine learning for finance, data visualization, and quantitative finance. Throughout my academic journey, I've collaborated with several leading universities in Colombia, including Pontificia Universidad Javeriana Cali, Universidad ICESI, Universidad San Buenaventura Cali, and Universidad del Tolima—sharing knowledge and training students in areas at the intersection of data and finance. My research explores the dynamics of energy markets and energy finance, as well as quantitative approaches in business analytics, risk management, and econometrics. I've published in specialized journals on energy and finance, contributing to the development of data-driven insights that inform policy and business decisions in complex, evolving environments. More info: www.joaquibarandica.com

RESEARCH INTERESTS

- Energy Finance
- Business Analytics
- Quantitative Finance
- Applied Econometrics and Statistics
- Energy Markets

Education

PhD in Industrial Engineering

Cali, Colombia

UNIVERSIDAD DEL VALLE

2020 - 2023

- Research: Topics in Asset and Liability Management: a comparative vision between emerging and developed economies
- Advisors: Diego F. Manotas - Jorge M. Uribe

MSc Applied Economics

Cali, Colombia

UNIVERSIDAD DEL VALLE

2015 - 2017

- Research: Effect of the world interest rate on the equity markets of emerging economies
- Advisors: Jorge M. Uribe

BSc Statistics

Cali, Colombia

UNIVERSIDAD DEL VALLE

2008 - 2014

- Research: Modeling the effect of climatological factors on the productivity of rice cultivation in some producing areas of Colombia with information from historical series
- Partner: Oscar W. Orozco
- Advisors: David Arango - Javier Olaya

COMPLEMENTARY COURSES

Jun. 2018 **Big Data (Text Mining)**: (Cali, Colombia)

Pontificia Universidad Javeriana de Cali

May 2017 **Introduction to Mixed Generalized Linear Models**: (Cali, Colombia)

Colombian Society of Statistics

Apr. 2016 **Data Mining**: (Cali, Colombia)

Colombian Society of Statistics

Work Experience

Universidad del Valle

Cali, Colombia

ASSISTANT PROFESSOR

2016 - Current

- School of Statistics
- School of Industrial Engineering
- Department of Economics (2020)

Pontificia Universidad Javeriana de Cali ASSISTANT PROFESSOR <ul style="list-style-type: none"> • Department of Accounting and Finance • Department of Economics • Department of Natural Sciences and Mathematics (2016 - 2019) 	Cali, Colombia 2016 - Current
Universidad del Tolima ASSISTANT PROFESSOR <ul style="list-style-type: none"> • Department of Economics and Finance 	Ibagué, Colombia 2021
Universidad ICESI ASSISTANT PROFESSOR <ul style="list-style-type: none"> • Department of Mathematics and Statistics 	Cali, Colombia 2016 - 2019
Universidad San Buenaventura Cali ASSISTANT PROFESSOR <ul style="list-style-type: none"> • Department of Economics 	Cali, Colombia 2019
Universidad Santiago de Cali ASSISTANT PROFESSOR <ul style="list-style-type: none"> • Education Faculty 	Cali, Colombia 2018
CIAT - The International Center for Tropical Agriculture VISITING RESEARCH <ul style="list-style-type: none"> • Program cassava breeding 	Palmira, Colombia 2014

Publications

ARTICLES

2025	Evaluation of energy complementarity in colombia: An analysis of climate variability and non-conventional sources. (with Manotas-Duque, Diego F., Rivera-Cadavid, Leonardo.). <i>Results in Engineering.</i> 27 : https://doi.org/10.1016/j.rineng.2025.105824
2025	Interaction between armed conflicts and energy prices in Colombia. (with Manotas-Duque, Diego F., López-Estrada, Sebastián.). <i>International Journal of Energy Economics and Policy.</i> 15 (3): 758-769 https://doi.org/10.32479/ijee.16887
2025	Pathways to specialized renewable energy generation: insights from integer portfolio optimization in a globalized electricity market. (with Manotas-Duque, Diego F., Uribe, Jorge M.). <i>Energy, Sustainability and Society.</i> 15 11: https://doi.org/10.1186/s13705-024-00508-6
2024	Non-linear dynamics of global liquidity and energy sector profitability. (with Manotas-Duque, Diego F.). <i>Energy Sources, Part B: Economics, Planning, and Policy.</i> 19 1: https://doi.org/10.1080/15567249.2024.2407772
2024	Exploring the asymmetric relationship between macroeconomic factors and corporate profitability in the MSCI Colombia index. (with Osorio-Vanegas, Brayan., Ramirez-Patiño, Carolina., Ojeda-Echeverry, Cesar A.). <i>Journal of Economics, Finance and Administrative Science.</i> 30 59: 41-60 https://doi.org/10.1108/JEFAS-08-2023-0234
2024	Common factors in the profitability of energy firms. (with Manotas-Duque, Diego F., Uribe, Jorge M.). <i>The Energy Journal.</i> 46 2 : https://doi.org/10.1177/01956574241280779
2024	Weather conditions, climate change, and the price of electricity. (with Mosquera-López, Stephania., Uribe, Jorge M.). <i>Energy Economics.</i> 137 107789 : https://doi.org/10.1016/j.eneco.2024.107789
2024	Macrofinancial interconnections in the Pacific Alliance: a quantile approach of stock markets and macroeconomic factors. (with Gómez-Daza, Jesús A., López-Estrada, Sebastián.). <i>Applied Economics Letters.</i> 104328 : https://doi.org/10.1080/13504851.2024.2383259
2023	Directional predictability between interest rates and the Stoxx 600 Banks Index: A quantile approach. (with Oviedo-Gomez, Andres., Manotas-Duque, Diego F.). <i>Finance Research Letters.</i> 104328 : https://doi.org/10.1016/j.frl.2023.104328

- 2023 **How do climate and macroeconomic factors affect the profitability of the energy sector?.** (with Manotas-Duque, Diego F.). *International Journal of Energy Economics and Policy*. 13 (4): 1-11
<https://doi.org/10.32479/ijeeep.14303>
- 2023 **Relación predictiva no lineal entre el PIB per-cápita y la tasa de mortalidad: caso de estudio Reino Unido.** (with Orozco-Cerón, Oscar W.). *Desarrollo y Sociedad*. 93 : 177-206
<https://doi.org/10.13043/DYS.93.5>
- 2022 **Commonality , macroeconomic factors and banking profitability.** (with Manotas-Duque, Diego F., Uribe, Jorge M.). *The North American Journal of Economics and Finance*. 62 : 101714
<https://doi.org/10.1016/j.najef.2022.101714>
- 2022 **Assets Liability Management: A bibliometric analysis and topic modeling.** (with Manotas-Duque, Diego F.). *Entramado*. 18 (2): e-8242
<https://doi.org/10.18041/1900-3803/entramado.1.8242>
- 2022 **Mind the Gap! Socioeconomic Determinants of the Stunting Urban-Rural Gap for Children in Colombia.** (with Cárdenas, E., Osorio, A., Pico, S.). *Child Indicators Research*. :
<https://doi.org/10.1007/s12187-021-09880-7>
- 2019 **Elección del tipo de transporte en la clase trabajadora de Colombia: un análisis por regiones.** (with Rodríguez-Barco, D.). *Libre Empresa*. 16 (2): 65-79
<https://doi.org/10.18041/1657-2815/libreempresa.2019v16n2.6608>
- 2016 **Cassava Breeding I: The Value of Breeding Value.** (with Ceballos, H., Pérez, J., Lenis J., Morante, N., Calle, F., Pino, L., Hershey, C.). *Frontiers in Plant Science*. 7 : 1227
<https://doi.org/10.3389/fpls.2016.01227>
- 2016 **Cassava Breeding II: Phenotypic Correlations through the Different Stages of Selection.** (with Pérez, J., Lenis, J., Calle, F., Morante, N., Pino, L., Hershey, C., Ceballos, H.). *Frontiers in Plant Science*. 7 : 1649
<https://doi.org/10.3389/fpls.2016.01649>

CHAPTER OF THE BOOK

- 2023 **Fondos de inversión colectiva (FIC) como determinantes de la estabilidad del mercado accionario en Colombia.** (with Gómez-Daza, Jesús A., Barrios-Álvarez, Claudia). *Las ciencias económicas toman la palabra: Diálogos en un mundo cambiante*. Ed. Sello Editorial Javeriano. ISBN: 9786287709034
- 2019 **Resultados componente cuantitativo: acciones, conocimientos, actitudes y prácticas preventivas frente al VIH.** (with Canaval, G., Valencia, C., Muñoz, E., Tovar, R., Triviño, Z. Chantre, S., Chamorro, M.). *Tramas, sexualidades y prevención del VIH en jóvenes universitarios de Cali*. Ed. Sello Editorial Javeriano. ISBN: 78-958-5119-18-5

RESEARCH IN PROGRESS

- Under Review **Macroeconomic drivers of financial performance in power generation firms across emerging and developed markets.** (with Manotas-Duque, Diego F., Muñoz-Alzate, Luisa.). .
- Under Review **Mapping trends in green finance: A bibliometric and topic modeling analysis.** (with López-Estrada, Sebastián., Heredia-Carroza, Jesús., Agheorghiesei, Daniela-Tatiana.). .
- Under Review **Interconnectivity and risk propagation in hydrothermal electricity markets during periods of extreme generation stress.** (with Martínez-Ruiz, Yessenia., Soto-Paz, Jonathan.). .
- Under Review **Integrating equity into energy efficiency assessment: A metafrontier Malmquist-Luenberger analysis of energy poverty.** (with López-Estrada, Sebastián., Heredia-Carroza, Jesús.). .

Presentations

- July 2024 **Armed Conflict Dynamics and Energy Price Volatility: A Quantile Connectivity Approach.** (with López-Estrada Sebastián). 9 ELAEE.
(Rio de Janeiro, Brazil).
- July 2024 **Assessment of Energy Price Dynamics: A GAS Model and Quantile Regression Analysis between Natural Gas, Climate, and Electricity Markets.** (with Hernández-Rosero, W., Ramirez, G., Ojeda, C.). 9 ELAEE.
(Rio de Janeiro, Brazil).

- Feb. 2023 **Modeling the Effect of Natural Gas Price on Electricity Prices: Germany in Time of Crisis.** (with Hernández-Rosero, W., Ramírez, G., Ojeda, C.). *Workshop on Advances in Statistical Methods.* (Colombia).
- Dic. 2022 **Decision tools from index fund finance to explore the path towards a scenario of renewable energy generation with globalization and high specialization of regional electricity markets.** (with Manotas-Duque, Diego F., Uribe, Jorge M.). *CLAIO 2022 – XXI Latin Ibero-American Conference on Operations Research.* (Buenos Aires, Argentina).
- Nov. 2022 **Decision tools from index fund finance to explore the path towards a scenario of renewable energy generation with globalization and high specialization of regional electricity markets.** (with Manotas-Duque, Diego F., Uribe, Jorge M.). *ELAEE 2022 – Energy Transition in Latin America.* (Bogotá, Colombia).
- Jun. 2022 **Global liquidity and the profitability of energy firms.** (with Manotas-Duque, Diego F., Uribe, Jorge M.). *ICEE 2022 – Energy and Environment: Bringing together Economics and Engineering.* (Porto, Portugal).
- Feb. 2022 **Commonality , macroeconomic factors and banking profitability.** (with Manotas-Duque, Diego F., Uribe, Jorge M.). *Seminario CIEF 2022 – Centro de Investigaciones Económicas y Financieras - Universidad EAFIT.* (Colombia).
- Nov. 2021 **Distributed lag non-linear models (DLNM) of the effect of macroeconomic factors on the MSCI Colombia index of market capitalization in the stock market during the period 2001 to 2020.** (with Osorio, B., Ramírez, C.). *Workshop on Advances in Statistical Methods.* (Colombia).
- Sept. 2021 **Commonality , macroeconomic factors and banking profitability.** (with Manotas-Duque, Diego F., Uribe, Jorge M.). *IFABS 2021.* (Oxford, UK - (virtual)).
- Nov. 2020 **Assets Liability Management: Un análisis bibliométrico y modelación de temas.** (with -). *Semana de la Ingeniería - Universidad del Valle.* (Cali, Colombia).
- May 2019 **Social Responsibility and Financial Performance in violent settings: A study of Colombian Family Firms.** (with González, A., Rodríguez, Y., Maldonado, S., Pérez, M.). *15th Annual Family Enterprise Research Conference – FERC.* (The University of Vermont, USA.).
- Nov. 2018 **Análisis de la dinámica de reputación corporativa, responsabilidad social y gobierno de empresa utilizando stasis.** (with Ochoa, A.). *II Simposio de Biotecnología Industrial.* ISSN: 2665-1548 (Palmira, Colombia).
- Nov. 2018 **Divulgación de información de RSC: Un análisis de la dinámica de reputación corporativa, responsabilidad social y gobierno de empresa utilizando stasis.** (with Ochoa, A.). *II Congreso Colombiano de Estadística.* ISSN: 2665-2048 (Cali, Colombia).
- Oct. 2016 **Factores determinantes de la aplicación de los niveles de la GRI en la divulgación de información sobre responsabilidad social empresarial (RSE) para los años 2011 a 2015.** (with Maldonado, S., Gaitán, C., Acosta, A.). *International Finance Conference - IFC.* ISBN 978-956-362-941-5 (Viña del Mar, Chile).

Refereeing

JOURNALS

- Journal **Desarrollo y Sociedad**
Universidad de los Andes
- Journal **Entramados**
Universidad Libre de Cali
- Journal **Finance Research Letters**
Elsevier
- Journal **Annals of Operation Research**
Springer
- Journal **Applied Economics Letters**
Taylor and Francis

- Journal **Energy**
Elsevier
- Journal **Journal of Economics Finance and Administrative Science**
Emerald Publishing
- Journal **Journal of Infrastructure, Policy and Development**
EnPress Publishing
- Journal **Scientific Reports**
Nature
- Journal **Applied Sciences**
MDPI
- Journal **Energies**
MDPI
- Journal **Mathematics**
MDPI
- Journal **Sustainability**
MDPI
- Journal **Symmetry**
MDPI
- Journal **World Electric Vehicle Journal**
MDPI

Software

Language R, Python