José Ignacio González Rojas

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INTERESTS

Networks. Trade. Labor and Spatial Economics. Development. Applied Econometrics.

EDUCATION

B. Sc. Economics (Honors) — San José, CR | October 2022
Universidad de Costa Rica
Teacher Assistant (TA): Microeconomic Theory II. Professor: Édgar A. Robles, Ph. D. (Director of Economics Graduate Program of UCR)

RESEARCH EXPERIENCE

The Gains from Foreign Investment in an Economy with Distortions

LONDON SCHOOL OF ECONOMICS | Management (Predoc) — London, UK | Jul 2022 - Present
THE WORLD BANK GROUP | Development Research Group — Washington, D.C. | Dec 2020 - Jun 2021, Jan 2022 - Jul 2022

Trade and Integration Unit [Short Term Temporary]
PRINCETON UNIVERSITY — Princeton, NJ | Aug 2020 - Oct 2020
Researchers: I. Manelici, Ph. D. (AP LSE Economics), J. P. Vásquez, Ph. D. (AP LSE Management) and R. D. Zárate, Ph. D. (WB Research Economist)

- Implemented a GE model with IO linkages in **Julia** to quantify the effects of the entry of MNCs to Mexico by commuting zone, sector, and type of firm. Used contraction mapping and numerical methods techniques to calculate equilibrium for 790 locations, 16 sectors and 3 types in less than two minutes.
- Build an IO matrix for the Mexican Commuting Zones by sector and type of firm (formal, informal and MNE) starting from the WIOD and OECD IO matrices, INEGI microdata and Census using a gravity model to compute the flows between entities using **R**.
- Predict trade costs associated with different market distortions, e.g. labor, capital, crime, and others, by entity.
- Adapted string matching algorithms in **Python** to match each firm in Mexico's data with ORBIS correspondent ID, which accounted for the geographical location. This algorithm accounted for additional characteristics like geographic location to improve precision.
- Created interactive maps using **Geographical Information Systems' (GIS)** in **Python** that displayed descriptive statistics of string matching results per commuting zone in Mexico.

The Diffusion of Technology during the Last Three Millennia

SCIENCES PO — Paris, FR | Jul 2021 – Aug 2021
Researchers: J. M. Boehm, Ph.D. (AP Sciences Po), T. Chaney, Ph.D. (Professor USC) and D. Lashkari, Ph. D. (AP BC)

- Maintenance of a **Python** date cleaning package that transforms historic periods to their corresponding time interval (in years) using the Chronontology API for more than 30 million museum objects.
- Implemented functions to the packages to broaden the search criteria for historical periods with geographical features like borders and distance to nearby countries.
- Created unit tests for the package and performed version control with **Github**.

International Trade Data Analysis

UNIVERSITY OF CALIFORNIA, BERKELEY — Berkeley, CA | May 2020 – Jul 2020
Researchers: J. P. Vásquez, Ph. D.

- Calculated descriptive statistics of trade networks in **R**.
- Performed survival analysis of relationships in this network in **R**.
- Calculated the distance matrix of 37 countries and 50 states in the US weighted by their subpopulations in their regions in **R**.
- Replicate the results from Autor, Dorn and Hanson (2013) at the state level using the commuting zone-level data.

WORK EXPERIENCE

Building Capacity to Fight Tax Evasion

THE WORLD BANK GROUP | Development Research Group — Washington, D.C. | Jan 2022 - Present

Trade and Integration Unit [Short Term Temporary]

Researchers: B. Rijkers, Ph. D. (WB Senior Economist) and J-F. Arvis (WB Senior Transport Economist)

- Build variables to predict fraud using product-level data from Kenyan customs import declarations and relative price deviations reported by exporters in COMTRADE using **Python**.
- Calculate hypothetical revenue tax losses caused by undervaluation of customs reported prices with respect to COMTRADE using **Python**.
- Identify the differences in fraud detection in Kenyan ports that explain the composition of the trade using **STATA**.
- Proposed a variance decomposition that identified importers choose more fraudulent brokers for their fraudulent transactions.

FRIEDRICH NAUMANN FOUNDATION | Junior Research Associate — San José, CR | Feb 2021-Jul 2021

- Managed a group of 5 intern Research Assistants and trained them in blockchain technologies and crypto assets.
- Directed and co-wrote the blockchain technology chapter of the book.
- Collaborated with field work and designed the experiment to test the gains of using clean energy in cryptomining.

AWARDS, GRANTS AND HONORS

- Friedrich Naumann Foundation for Freedom's Liberalization of Energy Markets Grant for the project **Opportunities in the Central American Energy Markets for sustainable crypto mining: The Costa Rican Case**. **Co-investigator** along with André Campos, Alberto Sequiera and Asdrúbal Vargas **(Principal Investigator)**. **Award amount:** $ 7.200. (2021)

WORKING PAPERS

"Costa Rican Production Network: Stylized Facts" (w/ Alonso Alfaro-Ureña, Mariany Fuentes, Isabela Manelici and José P. Vásquez)

"Political Budget Cycles in elector-friendly expenditures. Evidence from Costa Rican Municipalities." (w/ André Campos and Augusto del Solar) [Undergraduate thesis]

BOOKS

Potencial eléctrico de Costa Rica para la Criptominería. (2021). (w/ André Campos, Alberto Sequeira, Luis D. Valverde and Asdrúbal Vargas) **Friedrich Naumman Foundation Central America**. `https://bit.ly/CriptoCR`

WORK IN PROGRESS

Has trade become an interdisciplinary field? Analysis of the top 100 journals in the last 50 years. (w/ Isabela Manelici and José P. Vásquez)

SKILLS

Programming Languages: Python, Julia, R, STATA, SQL
Typewritting and Office Programs: LaTeX, Word, Excel, PowerPoint
Technology: Git, UNIX, GIS, Jupyter, Web Scraping
Languages: Spanish (Native) and English (Fluent)