Jorge Andres Rivero

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Education

Ph.D., Economics, *University of Washington (UW), Seattle, WA* — Expected Spring 2024
Committee: Yanqin Fan (Chair), Jing Tao, Rachel Heath, Soumik Pal

M.S., Mathematical Sciences, *Florida International University (FIU), Miami, FL* — Spring 2017
Committee: Laura De Carli (Chair), Enrique Villamor, Zhongming Wang

B.A., Economics, *FIU, Miami, FL* — Spring 2015

Research Interests

Applied Econometrics · Addictive Goods · Health · Labor
Panel Data · Unsupervised Learning · Optimal Transport Theory

Honors & Awards

GSEE Dissertation Fellowship, UW	Winter – Summer 2023
Grover and Creta Ensley Fellowship in Economic Policy, UW	Spring 2022
Henry T. Buechel Memorial Fellowship, UW	Spring 2021
Graduate Teaching Assistantship, UW	Fall 2019 – Fall 2023
GSEE Bank of America Fellowship, UW	Fall 2018 – Spring 2019
Graduate Assistantship, FIU	Fall 2015 – Spring 2017

Research Papers

Job Market Paper

Type Fixed Effects and Rational Addiction: A GMM Framework for Latent Type Heterogeneity

Abstract. This paper reexamines Rational Addiction (RA) by introducing the type fixed effects (TFE) panel model. The TFE model incorporates heterogeneous coefficients and time-varying patterns of heterogeneity, which reflect differences in preferences and the addiction process. The model assumes the existence of a latent, time-invariant continuous variable referred to as a "type", which drives the heterogeneity in the parameters. Smoothness of the parameters as functions of the type is key to identification, allowing individuals of similar types to have similar parameter values. Correlation between the parameters, covariates, and instruments stem from type heterogeneity. I propose the type fixed effects generalized method of moments (TFE-GMM) estimator and establish consistency. I provide fast computation procedures based on the stochastic gradient descent algorithm. Simulations demonstrate good performance of this estimator. Using yearly household cigarette purchase data to estimate the model shows that most households follow cyclical consumption patterns and insensitivity to prices changes, giving support to educational interventions to curb smoking.

Publications

A solution for the greedy approximation of a step function with a waveform dictionary ,
with Pierluigi Vellucci, *Communications in Nonlinear Science and Numerical Simulation*, Vol 116, 2023.

Working Papers

Lorenz Map, Inequality Ordering and Curves Based on Multidimensional Rearrangements ,
with Yanqin Fan, Marc Henry, and Brendan Pass, 2022. *Revise and Resubmit (RESTAT)*.

Abstract. We propose a multivariate extension of the Lorenz curve based on multivariate rearrangements of optimal transport theory. We define a vector Lorenz map as the integral of the vector quantile map associated to a multivariate resource allocation. Each component of the Lorenz map is the cumulative share of each resource, as in the traditional univariate case. The pointwise ordering of such Lorenz maps defines a new multivariate majorization order. We define a multi-attribute Gini index and complete ordering based on the Lorenz map. We formulate income egalitarianism and show that the class of egalitarian allocations is maximal with respect to our inequality ordering over a large class of allocations. We propose the level sets of an Inverse Lorenz Function as a practical tool to visualize and compare inequality in two dimensions, and apply it to income-wealth inequality in the United States between 1989 and 2019.

Unobserved Grouped Heteroskedasticity and Fixed Effects

Abstract. This paper extends the linear grouped fixed effects (GFE) panel model to allow for heteroskedasticity from a discrete latent group variable. Key features of GFE are preserved, such as individuals belonging to one of a finite number of groups and group membership is unrestricted and estimated. Ignoring group heteroskedasticity may lead to poor classification, which is detrimental to finite sample bias and standard errors of estimators. I introduce the "weighted grouped fixed effects" (WGFE) estimator that minimizes a weighted average of group sum of squared residuals. I establish $\sqrt{NT}$-consistency and normality under a concept of group separation based on second moments. A test of group homoskedasticity is discussed. A fast computation procedure is provided. Simulations show that WGFE outperforms alternatives that exclude second moment information. I demonstrate this approach to examine the link between income and democracy and the effect of unionization on earnings.

In Progress

Switching, Quitting, and Relapse: A Demand Model for Nicotine Products and Consumer Type-Heterogeneity
Variable Productivity Heterogeneity from Farmer Skill Clusters: A case against misallocation in Uganda
Latent Groups with Many Heterogeneous Moments
Generalized Basis Expansions for the Method of Sieves

Teaching Experience

Instructor, *Department of Economics*, UW

ECON 482: Econometric Theory and Practice	Summer 2022
ECON 300: Intermediate Microeconomics	Winter 2022, Summer 2021, Spring 2021, Fall 2020
ECON 200: Introduction to Microeconomics	Spring 2020

Teaching Assistant, *Department of Economics*, UW

ECON 382: Introduction to Econometrics	Spring 2022
ECON 200: Introduction to Microeconomics	Winter 2021, Winter 2020, Fall 2019

Teaching Assistant, *Department of Mathematics*, UW

MATH 124: Calculus with Analytic Geometry 1	Fall 2023

Teaching Assistant, *Department of Mathematics*, FIU

MAA 4212: Advanced Calculus	Spring 2017, Spring 2016
MAP 5407: Functional Analysis (Graduate)	Fall 2016
MGF 1107: Social choice math	Fall 2015

Learning Assistant, *Department of Mathematics*, FIU

Calculus 1,2,3, College Algebra, Trigonometry and Precalculus	Fall 2013–Spring 2015

Professional Activities

Presentations

California Econometrics Conference, UW — September 2023
International Symposium on Econometric Theory and Applications, Yonsei University — July 2022

Mentorship

Econometrics Consultant for Honors Undergraduates — Spring 2022, 2023
Mentor for First-Year Economics PhD Students — 2020, 2021

Referee

Journal of Financial Econometrics

Service

Participant and Assistant, Optimal Transport and Econometrics Workshop, UW — June 2023

Skills

Programming Languages: R, MATLAB, Python
Other: Stata, SQLite, Mathematica, LaTeX, Canvas
Bilingual: English, Spanish

References

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