

Yihong Liu

2043 North Hall, Department of Economics
University of California
Santa Barbara, CA 93106

Phone: (984) 245-5678
E-mail: yihongliu@ucsb.edu

Education

University of California, Santa Barbara

Ph.D. in Economics

Expected June 2027

Santa Barbara, CA

Duke University

M.A., Economics

June 2021

Durham, NC

Shanghai University of Finance and Economics

B.A., Economics

June 2019

Shanghai, China

Research Interest

Research Interest:

Econometrics, Applied Econometrics, Environmental and Natural Resource Economics

Working Papers

Matched Triple Differences: A Framework for Valid Covariate Adjustment (Job Market Paper)

Abstract: This paper studies how covariate adjustment should be conducted in triple-differences designs. The leading empirical approach is linear regression adjustment, which augments the triple-differences regression with covariates. Under the conditional parallel gap assumption, we first derive a covariate balancing condition that a weighting estimator should satisfy to consistently estimate the average treatment effect on the treated (ATT). Expressing estimators from commonly used linear regression adjustments as weighting estimators reveals that they generally fail to satisfy this balancing condition and are therefore inconsistent for the ATT. To address this limitation, we propose a \emph{matched triple-differences} framework that achieves the required covariate balance through matching. Within this framework, we construct a consistent matched triple-differences estimator, establish its asymptotic normality, and provide a consistent variance estimator. The framework accommodates a general class of matching procedures, including nearest-neighbor matching and kernel matching.

Post Matching Two-way Fixed Effects Estimation (with Gonzalo Vazquez-Bare)

Abstract: When estimating treatment effects with two-way fixed effects (2WFE) models, researchers often use matching as a pre-processing step when the parallel trends assumption is thought to hold conditionally on covariates. Specifically, in a first step, each treated unit is matched to one or more untreated units based on observed time-invariant covariates. In the second step, treatment effects are estimated with a 2WFE regression in the matched sample, reweighting the untreated units by the number of times they are matched. We formally analyze this common practice and highlight two problems. First, with variation in treatment timing, the post-matching 2WFE estimator that pools all treated cohorts has an asymptotic bias, even when the treatment effect is constant across units and over time. Second, failing to account for the variability introduced by the matching procedure yields invalid standard error estimators, which can be biased upwards or downwards depending on the data generating process. We characterize the joint asymptotic distribution of the vector of cohort means over time and their matched counterparts, and use our results to provide consistent, asymptotically normal estimators of treatment effects, event-study coefficients and other

aggregate magnitudes, with valid standard errors that account for the matching step. We illustrate our results with simulations and with an empirical application.

Estimating Resource Games with Nonlinear Dynamics (with Shuchen Tsao)

Abstract: Nonlinear equations of motion are central to many policy contexts, including resource management and public health, where dynamics such as fish reproduction and disease transmission are inherently nonlinear. Because policy insights in these settings fundamentally hinge on these nonlinearities, standard linear approximations are inadequate. Moreover, strategic interactions between jurisdictions compound the computational burden of estimating such models. We develop a tractable Generalized Method of Moments (GMM) framework for dynamic games that accommodates heterogeneous agents alongside fully nonlinear, interactive state dynamics. We provide sufficient conditions under which our approach is feasible and establish its consistency and asymptotic normality. Finally, we apply the framework to a multi-country fishery game in East Asia, quantifying strategic harvest responses to climate-driven shifts in ocean currents.

Conference and Seminar

2026: University of California, Santa Barbara (CARE), AERE at the Western Economic Association International (WEAI)

2025: University of California, Santa Barbara (AMEL)

2024: CES North America Conference

Teaching Experience

University of California, Santa Barbara

Econ 241A Econometrics I (Ph.D. Core)	Fall 2024, 2025
Econ 241B Econometrics II (Ph.D. Core)	Winter 2023, 2024, 2026
Econ 210A Microeconomics I (Ph.D. Core)	Fall 2022, 2023
Econ 140A Introduction to Econometrics I	Spring 2023, 2025
Econ 2 Introductory Macroeconomics	Spring 2022
Econ 1 Introductory Microeconomics	Fall 2021, Winter 2022

Awards & Honors

Job Market Fellowship	2026
<i>University of California, Santa Barbara</i>	
Research Quarter Fellowship	2025, 2026
<i>University of California, Santa Barbara</i>	
Gretler Fellowship	2024
<i>University of California, Santa Barbara</i>	
M.A Merit Scholar Award	
<i>Duke University</i>	2019, 2020
Renmin Scholarship of the Graduating Class: Third Prize	
<i>Shanghai University of Finance and Economics</i>	2019
Outstanding Exchange Student of SUFE: Second Prize	
<i>Shanghai University of Finance and Economics</i>	2018

Specialized Skills

Programming Languages: STATA, R, MATLAB

Languages: Chinese(native), English(fluent)

References

Douglas Steigerwald

Professor of Economics

University of California, Santa Barbara

doug@ucsb.edu

Andrew Plantinga

Professor of Natural Resource Economics

University of California, Santa Barbara

plantinga@bren.ucsb.edu

Max Farrell

Associate Professor of Economics

University of California, Santa Barbara

maxhfarrell@ucsb.edu

Gonzalo Vazquez-Bare

Assistant Professor of Economics

University of California, Santa Barbara

gvazquez@econ.ucsb.edu