JESSIE COE

University of Texas at Austin
Department of Economics
2225 Speedway C3100
Austin, TX 78712

phone: 512-953-7398
jessie.coe@utexas.edu
www.jessiecoe.com

DOCTORAL STUDIES

University of Texas at Austin (UT Austin)
Ph.D., Economics, May 2019 (Expected)
Dissertation: *"Essays on Econometrics"*
Job Market Paper: *"Estimation of Fixed Effects Models with Missing Covariate Data, with an Application to Valuing Local Water Quality"*

DISSERTATION COMMITTEE AND REFERENCES

Jason Abrevaya (Co-chair)
Department of Economics
University of Texas at Austin
512-475-6546
abrevaya@austin.utexas.edu

Brendan Kline (Co-chair)
Department of Economics
University of Texas at Austin
512-475-8524
brendan.kline@austin.utexas.edu

Stephen Donald
Department of Economics
University of Texas at Austin
512-471-8907
stephen.g.donald@austin.utexas.edu

Sheila Olmstead
LBJ School of Public Affairs
University of Texas at Austin
512-471-2064
sheila.olmstead@austin.utexas.edu

UT PLACEMENT DIRECTOR

Sandra Black
512-475-8519
sblack@austin.utexas.edu

UT PLACEMENT COORDINATOR

Vivian Goldman-Leffler
512-475-8510
vivian@austin.utexas.edu

PRIOR EDUCATION

M.S., Economics, University of Texas at Austin, 2015
M.A., Economics, University of South Florida, 2013
M.A, Mathematics, University of Southern California, 2007
M.A., Applied Mathematics, University of Southern California, 2007
B.A., Mathematics, Pomona College, *cum laude*, 2004

CITIZENSHIP

United States

TEACHING AND RESEARCH FIELDS

Fields: Econometrics, Applied Microeconomics
Sub-Fields: Microeconometrics, Environmental Economics, Labor Economics

Teaching Experience

Instructor:

Summer 2017	Introduction to Econometrics, UT Austin Evaluations: Instructor 4.5/5, Course 4.3/5

Teaching Assistant, Economics:

2015 – 2018	Econometrics I (Ph.D. level), UT Austin, for Stephen Donald
2015 – 2018	Econometrics (M.A. level), UT Austin, for Jason Abrevaya
Fall 2014	Microeconomic Theory, UT Austin, for Gerald Oettinger
Fall 2013	Economic Statistics, UT Austin, for Valerie Bencivenga
2012 – 2013	Introduction to Economics, University of South Florida

Teaching Assistant, Mathematics:

2010	Differential Equations, University of Southern California
2008 – 2010	Calculus II, University of Southern California
2007 – 2008	Calculus I, University of Southern California
2005 – 2007	Probability and Statistics for Business, University of Southern California

Honors, Scholarships, and Fellowships

Fall 2018	UT Austin, Office of Graduate Studies, Professional Development Award
Summer 2018	UT Austin, Department of Economics, Summer Fellowship
May 2018	UT Austin, Department of Economics, Outstanding TA Award
Fall 2017	UT Austin, Office of Graduate Studies, Professional Development Award
Summer 2016	UT Austin, Department of Economics, Summer Fellowship
2013 – 2015	UT Austin, Department of Economics, Fellowship

Professional Activities

Conferences:

October 2018	Midwest Econometrics Group (MEG), Madison, Wisconsin, "Estimation of Fixed Effects Models with Missing Covariate Data, with an Application to Valuing Local Water Quality" (*Job Market Paper)*
October 2018	Canadian Econometric Study Group (CESG), Ottawa, ON, Poster Session, *Job Market Paper*
February 2018	Texas Camp Econometrics, Austin, TX, *Job Market Paper*
October 2017	Midwest Econometrics Group (MEG), College Station, TX, *Job Market Paper*

Organization:

2015 – 2018	President, Economics Graduate Student Organization

Research Experience and Other Employment

2014	IC^2 Institute, UT Austin, Graduate Research Assistant for Elsie Echeverri-Carroll

WORKING PAPERS

Job Market Paper

"Estimation of Fixed Effects Models with Missing Covariate Data, with an Application to Valuing Local Water Quality"

This paper considers estimation of a linear fixed effects model in which covariate values may be missing. Two inverse probability weighted (IPW) estimators are proposed. The main assumption is a missing at random assumption (MAR) which allows missingness (observation) to be related to the outcome and its shocks, but requires that the probability of observation is not related to the missing values. The inverse of the estimated probability of observation is used to re-weight the estimating equations, which are then estimated in a second stage by either computationally simple pooled OLS or more asymptotically efficient GMM. Both of the proposed estimators are consistent and root-n asymptotically normal, and the asymptotic variance is derived. The main results are developed for the classical linear fixed effects model under strict exogeneity, and the approach generalizes to many panel models, including dynamic linear unobserved effects models.

As an application, the proposed estimator is applied to a hedonic housing price model in which the willingness to pay for local water quality is reflected in house prices. Water quality, the main regressor of interest, is missing for many houses in many time periods. Empirical evidence suggests that, in line with the MAR assumption, observation is related to house prices but not water quality itself. The results suggest that accounting for the missing mechanism is important, as the estimated willingness to pay differs in magnitude and statistical significance between the proposed two-step IPW estimator and the more commonly used unweighted estimator which drops incomplete observations.

Works in Progress

"The Hausman Test with Heteroskedasticity," with Stephen Donald.

The standard form of the Hausman test relies on the assumption of homoskedasticity. This paper shows that using an optimal GMM estimator for an augmented null hypothesis results in a Hausman test statistic with the familiar form that is valid under arbitrary forms of heteroskedasticity. The Hausman test statistic is shown to have the correct size, and local power is calculated and compared to other heteroskedasticity-robust Hausman tests proposed in the literature. The proposed Hausman test is straightforward to implement using canned GMM packages now available in most statistical software.

"Bounding Average Treatment Effects using Post-Treatment Variables"

There are often post-treatment variables available in a data set but excluded from analysis of average treatment effects. If the distribution of post-treatment variables varies across treatment status and a monotone treatment selection assumption is employed, then post-treatment variables can be used to tighten bounds on the average treatment effect. The bounds are applied to the effect of maternal smoking on the probability of having a low birth weight baby, using prenatal visits as a post-treatment variable.

"Temper, Temper! The Effect of Temperature on Automobile Accidents," with Katherine Keisler.

Using daily temperature and accident data, we measure the impact of increased temperature on both the incidence and severity of automobile accidents. Numerous studies have linked increased temperatures to mortality in vulnerable groups. This study adds to the literature on the disutility from increased temperature by capturing effects that are not necessarily fatal, and which affect otherwise non-vulnerable groups; namely, teenagers and adults.