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Research Interests

Microeconometrics, Finance, Machine Learning

Education

Temple University, Philadelphia, PA, USA

Ph.D., Economics (*Expected:* May 2019)

Dissertation Title: *Essays on Microeconometrics and Finance*
Committee: Brantly Callaway(Chair), Oleg Rytchkov, Douglas A. Webber

M.A., Economics 2016

Shenzhen University, Shenzhen, China

M.S., Finance, *With Honor* 2013

Thesis: *A Study of Correlation Between Cash Flow and Investment Opportunities Based On Listed Companies In SME and GEM*
(*Awarded Outstanding Graduation Thesis*)
Advisors: Shiping Guo and Zhengping Xiong

Southern Medical University, Guangzhou, China

B.S., Medical Tests 2009

Working Papers

1) "Decomposing Differences in Portfolio Returns Between North America and Europe". (***Job Market Paper***).

Abstract: The paper decomposes differences in mean and a series of quantiles of portfolio returns between North America and Europe into Fama and French's five factors. We show that the differences in risk premia on factors, especially on market and size factors, account for most of the differences and the differences in factor risks seem to play an insignificant role in aggregate. We also show that the roles that the risk premia on market and size factors play vary at different levels of portfolio returns, implying the market and size factor risk premia vary at different levels of portfolio returns. Also, we find that the risks on some factors seem to vary at different levels of portfolio returns. These findings shed further light on empirical asset pricing.

Download: Link-1 or Link-2

2) "Distributional Effects of a Continuous Treatment with an Application on Intergenerational Mobility" with Brantly Callaway. (***Submitted***)

Abstract: This paper considers the effect of a continuous treatment on the entire distribution of outcomes after adjusting for differences in the distribution of covariates across different levels of the treatment. Our methodology encompasses dose response functions, counterfactual distributions, and "distributional policy effects" depending on the assumptions invoked by the researcher. We propose a three-step estimator that consists of (i) estimating the distribution of the outcome conditional on the treatment and other covariates using quantile regression; (ii) for each value of the treatment, averaging over a counterfactual distribution of the covariates holding the treatment fixed; (iii) manipulating the counterfactual distribution into a parameter of interest. We show that our estimators converge uniformly to Gaussian processes and that the empirical bootstrap can be used to conduct uniformly valid inference across a range of values of the treatment. We use our method to study intergenerational income mobility where we consider distributional effects of parents' income on child's income such as (i) the fraction of children with income below the poverty line, (ii) the variance of child's income, and (iii) the inter-quantile range of child's income – all as a function of parents' income.

Download: Link-1 or Link-2

3) "Local Intergenerational Elasticities" with Brantly Callaway. (***Revise and Resubmit at Economics Bulletin***)

Abstract: The intergenerational elasticity (IGE) is the most common parameter reported in the intergenerational mobility literature. This paper proposes a "local" intergenerational mobility parameter (LIGE) that allows the effect of parents' income to vary across different values of parents' income. We also extend this result to an "adjusted" local intergenerational elasticity (ALIGE) which adjusts for differences in the distribution of observed characteristics at different values of parents' income. We develop the asymptotic properties of the LIGE and ALIGE, and apply them to study intergenerational mobility using data from the PSID. We find that the intergenerational elasticity is much larger for low values of parents' income (indicating *less* mobility) relative to high values of parents' income; adjusting for differences in characteristics reduces the local IGE at all values of parents' income as well as flattening it across different values of parents' income.

Download: Link-1 or Link-2

4) "Bayesian Distribution Regression" with Emmanuel S. Tsyawo.

Abstract: This paper introduces a Bayesian version of distribution regression. With this method, we are able to estimate the distribution of the entire distribution of the outcome variable and do inference on statistics of interest. Based on the estimated distribution, quantiles, variance, mean among other distributional statistics of the outcome, counter-factual outcome, treatment effects inter alia can be estimated and inference about these are straightforward. In addition, asymptotic approximation of the posterior distribution enables joint inference at arbitrarily many points of the distribution of the outcome, treatment effects, etc. Our application of the method to the Fama-French five-factor model demonstrates substantial heterogeneity in the impact of the market return on the distribution of the portfolio return.

Download: Link-1 or Link-2

5) "Semiparametric Estimation of Oaxaca-Blinder Decompositions with Continuous Groups" with Brantly Callaway.

Abstract: This paper considers Oaxaca-Blinder type decompositions with continuous groups. In particular, we decompose the differences between outcomes at a series of values of the group variable and at a particular value of the group variable into (i) a composition effect and (ii) a structure effect. The composition effect is due to differences in the distribution of observed characteristics (e.g. race or education) for individuals at two particular values of the continuous group variable. The structure effect is due to difference in the "return" to characteristics at two particular values of the continuous group variable. We also consider detailed decompositions of both the composition and structure effects. Our procedure is based on semiparametric smooth varying coefficient models that are essentially "local" (in terms of the continuous group variable) regressions. This approach is distinct from previous work on decompositions with continuous groups that invoke parametric models. We develop the limiting distribution of our estimator and show the validity of the wild bootstrap for conducting inference. We apply our method to decompose earnings differentials for individuals across different values of their parents' income (i.e. parents' income is the continuous group).

Download: Link

Works In Progress

1) "Decomposition of Differences in Distributions with Continuous Groups" with Brantly Callaway.

2) "Decomposing Differences in Portfolio returns between Normal Time Periods and Recessions".

Non-academic Publications

"How Does 'Railway Administration' Be Integrated To The Big Ministry System?" with Shiping Guo, *ACHIEVE*, 22–23, 2013

Teaching and Research Experience

Instructor

Macroeconomic Principles — Fall 2018

Intermediate Macroeconomic Analysis — Summer 2017

Microeconomic Principles — Summer 2016

Teaching Assistant

Intermediate Microeconomic Analysis, Prof. Willian Stull — Fall 2016, Spring/Fall 2017, Spring 2018

International Monetary Economics/ International Trade, Prof. Mohsen Fardmanesh — Fall 2015, Spring/Fall 2016

Behavioral Economics/ Economics for Life/ Macroeconomic Principles, Prof. Donald T. Wargo — Fall 2014, Spring/Fall 2015, Fall 2016, Spring 2017

Macroeconomic Principles, Prof. Dimitrios I. Diamantaras — Fall 2014

Microeconomic Principles/ Macroeconomic Principles, Prof. John Dileonardo — Fall 2015, Spring 2016

Microeconomic Principles, Prof. Gary W. Bowman — Fall 2015

Research Assistant

Supervisor: Prof. Brantly Callaway — Fall 2017, Spring 2018

Honors and Fellowships

Temple University
- Doctoral Dissertation Completion Grant — Spring 2019
- The Lacy H. Hunt Research Fellowship — Summer 2018
- Teaching & Research Assistantship — Sep 2014 – May 2018

Shenzhen University
- Outstanding Graduate Student — May 2013
- Outstanding Student — Nov 2012

Corporate Experience

Customer Manager, Central China Securities — Jun 2011–Sep 2011

Medical Representative, Guangdong Techpool Bio-pharma Co., Ltd — Jul 2009– Jul 2010

Service

Co-founder, Temple Econometrics Reading Group — Feb 2017 – Present

Team leader, Center for Regional Economics at Temple — Sep 2014–Sep 2015

Software

Software:
R, Matlab, Stata, LaTeX, Python

R packages:

1. *dec* (GitHub: WeigeHuangEcon)
   dec contains functions used to computing decomposition components for differences in mean and quantiles as in Huang (2018).

2. *TempleMetrics* (published on CRAN) with Brantly Callaway
   TempleMetrics is used to estimate conditional distributions and conditional quantiles. The versions of the methods in this package are primarily for use in multiple step procedures where the first step is to estimate a conditional distribution. In particular, there are functions for implementing distribution regression, quantile regression, and versions of local linear distribution regression; all in a unified framework. Distribution regression provides a way to flexibly model the distribution of some outcome Y conditional on covariates X without imposing parametric assumptions on the conditional distribution but providing more structure than fully nonparametric estimation (See Foresi and Peracchi (1995) and Chernozhukov, Fernandez-Val, and Melly (2013)).

3. *ccfa* (published on CRAN) with Brantly Callaway

   ccfa contains methods for computing counterfactuals with a continuous treatment variable as in Callaway and Huang (2017). In particular, the package can be used to calculate the expected value, the variance, the interquantile range, the fraction of observations below or above a particular cutoff, or other user-supplied functions of an outcome of interest conditional on a continuous treatment. The package can also be used for computing these same functionals after adjusting for differences in covariates at different values of the treatment. Further, one can use the package to conduct uniform inference for each parameter of interest across all values of the treatment, uniformly test whether adjusting for covariates makes a difference at any value of the treatment, and test whether a parameter of interest is different from its average value at an value of the treatment.

4. *bayesdistreg* (GitHub: WeigeHuangEcon) with Emmanuel S. Tsyawo

   bayesdistreg is used to do Bayesian Distribution Regression as in Huang and Tsyawo (2018).

LANGUAGES

Chinese (native), English(fluent), Cantonese (intermediate)

REFERENCES

Prof. Brantly Callaway
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