ZHEZHI(ZZ) HOU

CONTACT INFORMATION
Updated: September 14, 2019
Department of Economics
Binghamton University, State University of New York
Binghamton, NY 13902-6000
Cell phone number: (607) 768-0618
Email: zhou3@binghamton.edu
sites.google.com/binghamton.edu/zhezhihou

EDUCATION

Ph.D., Economics, Binghamton University, expected May 2020
Dissertation Title: "Essays on the Production Economics"
Committee: Subal C. Kumbhakar (chair), Wei Xiao, Florian Kuhn
M.A, Economics, Kent State University, December 2013
B.A., Major in Finance, Minor in Law, Southwest University of Political Science & Law, June 2012

RESEARCH FIELDS

Econometrics/Applied Econometrics, Applied Microeconomics, Industrial Organization

RESEARCH INTERESTS

Spatial Econometrics, Economics of Education, Nonparametric and Semiparametric Methods
The Chinese Economy, Panel Data Analysis, Efficiency and Productivity Analysis

PAPERS UNDER REVISION AND RESUBMIT STATUS

"Growing from Spillovers: A Semiparametric Varying Coefficient Approach" with J. Man and S. Kumbhakar (*Revise and Resubmit at European Journal of Operational Research*)

WORKING PAPERS

"A Semiparametric Stochastic Frontier Model with Spatial Correlated Inefficiency" with S. Zhao
"Public Capital and the Productivity Puzzle Re-visit" with S. Kumbhakar

CONFERENCE AND SEMINAR PRESENTATION

North American Productivity Workshop X, University of Miami, Miami, June 2018
Sustainability and Development Conference, University of Michigan, Ann Arbor, November 2018
The Economics Department Seminar Series, Kent State University, Kent, December 2018

TEACHING INTERESTS

Development Economics, Macroeconomics, Microeconomics, Econometrics/Applied Econometrics
Probability and Statistics, Mathematical Economics

TEACHING EXPERIENCE

Instructor of Record

Ithaca College

Instructor: Principles of Macroeconomics, Spring 2019

Binghamton University

Adjunct Assistant Professor: Economics of Developing Countries (Session A), Fall 2019
Economics of Developing Countries (Session B), Fall 2019

Instructor: Economics of Developing Countries, Spring 2017

Graduate Teaching Assistant

Guest Lecturer:	Panel Data & Stochastic Frontier Model (Ph.D. level), Spring 2018 Applied Econometrics (Ph.D. level), Fall 2016
Teaching Assistant:	Macroeconomic Theory I (Ph.D. level), Fall 2017 Applied Econometrics (Ph.D. level), Fall 2016 International Monetary Economics, Spring 2016 Econometrics, Fall 2015 Economics Development – East Asian, Fall 2014

RESEARCH EXPERIENCE

Research Assistant to Ritam Chaurey, Spring 2015

AWARDS AND HONORS

Travel Grant of Department of Economics, Binghamton University, May 2018
Travel Grant of Department of Economics, Binghamton University, October 2018
Tuition Scholarship and Teaching Assistantship, Binghamton University, 2014-2019
VanBenthuysen Top Student Scholar, Kent State University, 2013
Tuition Scholarship and Graduate Assistantship, Kent State University, 2012 & 2013

SKILLS

Econometrics: Linear Regression, Logistic Regression, Maximum Likelihood Estimation
Generalized Method of Moments, Non/Semi-Parametric Estimation, Dynamic & Static Panel Data Modelling, Bootstrap
Software: Matlab, R, Stata, SAS, Java, C, Python, Latex, GitHub

PROFESSIONAL ACTIVITIES

Bank of Communications Co., Ltd., Internship, Hefei, China, January 2011
Bank of East Asia, Limited, Internship, Hefei, China, January 2009

REFERENCES

Subal C. Kumbhakar (Chair)
University Distinguished Professor
Department of Economics
State University of New York at Binghamton
Phone: (607)777-4762
Email: kkar@binghamton.edu

Wei Xiao
Professor
Department of Economics
State University of New York at Binghamton
Phone: (607)777-4351
Email: wxiao@binghamton.edu

Florian Kuhn
Assistant Professor
Department of Economics
State University of New York at Binghamton
Phone: (607)777-4415
Email: fkuhn@binghamton.edu

Shunan Zhao
Assistant Professor
Department of Economics
Oakland University
Phone: (248)370-3291
Email: shunanzhao@oakland.edu

ABSTRACTS

"Growing from Spillovers: A Semiparametric Varying Coefficient Approach" (Job Market Paper)

It is conventional wisdom that China's rapid industrialization in recent years is marked by increased agglomeration. This paper examines whether there are productivity spillover effects among clustered firms, and if so, whether human capital affects firms' absorption of spillovers. I propose a semiparametric spatial autoregressive production function in which coefficients are smooth unknown functions of firms' human capital. The varying coefficients not only allow for flexible interactions between human capital and other inputs, but also permit heterogeneous spatial dependence and spillover effects across firms. While the commonly used spatial weighted matrix captures possible learning opportunities among firms, I hypothesize that a firm with more human capital is better at seizing these opportunities. Furthermore, I tackle the simultaneity issue generated by the endogenous inputs using the proxy variable method. I implement this model empirically to analyze firm productivity of China's computer and peripheral equipment industry from 1998 to 2007, and examine the effects of human capital on output elasticities as well as productivity spillovers.

Keywords: productivity, spillovers, agglomeration, human capital, nonparametric econometrics, Spatial econometrics

JEL Classification: D24, R3, O14, O53, J2, C14

"A Semiparametric Stochastic Frontier Model with Spatial Correlated Inefficiency"

This paper measures production inefficiencies of a group of firms while considering the spatial dependence between them. To the best of our knowledge, stochastic frontier analysis literature has not given enough attention to the spatial interactions among geographically clustered producers. However, omission of the spatial dependence may lead to an inconsistent estimate of the efficiency scores. Therefore, we develop a stochastic frontier production function with a spatially correlated error component to overcome the limitations of traditional stochastic frontier specifications. The varying coefficient structure introduced in our model also enables us to capture the individual heterogeneity in terms of input efficiency. To identify the proposed production function, we implement a two-step procedure to handle the special features in the estimated equation while focusing on the issues of spatial dependence and semiparametric smooth coefficients. A likelihood function for the composite error term is derived to facilitate our MLE estimation in the second step. Monte Carlo Simulations indicate that our estimator has a good finite-sample performance. To check the performance on real-world data, we use our model to measure the technical inefficiencies of 41 European countries under the context of spatial dependence.

Keywords: spatial effect, semiparmetric econometrics, stochastic frontier analysis (SFA)

JEL Classification: C14, C21, C23, D24

"Public Capital and the Productivity Puzzle Re-visit"

This paper explores the impact of public capital on private sector output in the context of more flexible specifications with the state-level data in the United States from 1970 to 1986. Even without empirical evidence it is natural for us to believe public capital can benefit the private sector productivity via the intermediate services the public expenditures provide. However, based on most of the previous empirical analysis, the return of the public capital estimated from the Cobb Douglas technology is often negative or insignificant. To solve this contradiction between our prior belief and past empirical evidence, I hypothesize these unreasonable estimates may result from inappropriate functional forms. Specifically, the strictly linear specification of the production function, which is widely imposed in previous literature, may lead to model misspecifications resulting in the inconsistent estimates. To approach our research questions, I implement several semi/nonparametric models with fixed effect to examine the impact of public capital on private output. {Additionally, since the cross-sectional dependence is often ignored by former authors in this strand of literature, I also propose production functions with multifactor error structure to study whether or not the inclusion of cross-sectional dependence will affect the coefficient estimates of public capital. In conclusion, we find the coefficient of total public capital on private output is always of a small magnitude, statistically insignificant, and not sensitive to the chosen functional form. However, when we disaggregate public capital into its corresponding components, we find the effect of water and sewer systems is positive, and the impact of highways is sometimes positive and sometimes negative.

Keywords: public capital, nonparametric, fixed effect, cross sectional dependence, productivity

JEL Classification: C14, H41, O18, C33