PENG SHAO

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CONTACT

Department of Economics	Work Phone: 334-844-2926
129 Miller Hall	E-mail: pzs0078@auburn.edu
Auburn University	
Auburn, AL 36849-5049, USA	

ACADEMIC APPOINTMENT

2020 - Present: Assistant Professor of Economics, Auburn University

EDUCATION

2020 - Ph.D. Economics, University of Pennsylvania
2014 - MASt Pure Mathematics, University of Cambridge
2012 - B.A. Economics and Mathematics, University of Edinburgh

FIELDS

Primary: Econometrics
Secondary: Industrial Organization, Applied Microeconomics

RESEARCH

Working Papers:

- "Semiparametric Panel Model with Group Heterogeneity".

  Abstract: This paper studies a semiparametric partially linear panel model with time-varying group-level effects. As a critical feature, the group memberships are unobserved but time-invariant. The linear coefficients' estimator is shown asymptotically normal for inference. For production function estimation, the paper also considers a two-step problem; the objective (second-step) parameter is identified by moments, conditional on the partially linear model's potentially infinite-dimensional parameters. The paper proposes a second-step estimator and shows that it is consistent. The two analyses generically connect to the control function problem under the presence of time-varying heterogeneity for panel models. With the two-step solution, the paper extends the proxy variable method, designed for the simultaneity problem with estimating the firm's production function, by allowing cross-correlation in firms' productivity. For the empirical application, I consider four Chilean manufacturing sectors from 1987 to 1996. After accounting for cross-correlated productivity, I find larger productivity effects on output growth and more heterogeneous productivity among firms.

- "Clustering for Multidimensional Heterogeneity with Application to the Production Function" (with Xu Cheng and Frank Schorfheide)

  Abstract: This paper provides a new multi-dimensional clustering approach for unobserved heterogeneity in panel data models. Each unit is associated with multiple clusters. For example, a firm can belong to the high productivity group and the low output elasticity group. In contrast, the standard one-dimensional clustering approach would be based on separate groups for each productivity-elasticity pair. Our approach provides substantial gains in estimation accuracy when unobserved features have sparse interactions, e.g., there are only a few firms with high productivity and low output elasticity. We propose an estimator for the unobserved group memberships

and the group-specific and common parameters in a nonlinear GMM framework and derive its large sample properties. In particular, we provide the first classification consistency result in a nonlinear GMM setup. We re-evaluate the rise of aggregate markup in De Loecker, Eeckhout, and Unger (2018) by replacing their sector-specific production functions with cluster-based ones. We find that the upward trajectory persists, but the magnitude is less pronounced after accounting for multi-dimensional heterogeneity.

- "Matching to Produce Information: A Model of Self-Organized Research Teams" (with Ashwin Kambhampati and Carlos Segura-Rodriguez)

Abstract: In recent decades, research organizations have brought the "market inside the firm" by allowing workers to sort themselves into teams. How do research teams form absent a central authority? We introduce a model of team formation in which workers first match and then non-cooperatively produce correlated signals about an unknown state. We uncover a novel form of moral hazard: an efficient team of workers producing complementary signals may be disrupted if one of its members can form an inefficient team in which she exerts less effort. This inefficiency rationalizes targeted management interventions which designate specific workers as "project leaders" with more assumed responsibilities.

TEACHING EXPERIENCE

Instructor:
Auburn Economics 4600: Econometrics	Undergraduate Course	Spring/Fall 2021
Auburn Economics 3200: Money and Banking	Undergraduate Course	Fall 2020

Teaching Assistant:
Penn Economics 104: Econometrics	Undergraduate Course	2015 - 2019
Penn Economics 705: Econometrics I	Graduate Course	2015, 2016
Penn Economics 002: Introductory Macroeconomics	Undergraduate Course	2016

HONORS AND AWARDS

2019	Maloof Family Award Dissertation Fellowship in Economics	University of Pennsylvania
2015	Distinction in the Preliminary Examination in Econometrics	University of Pennsylvania
2014	University Fellowship	University of Pennsylvania
2012	Prize for one of the Best Dissertations	University for Edinburgh
2011	Dean's List	WUSTL
2010,2011	Lanfine Bursary	University of Edinburgh
2009	Morgan Stanley Prize for in Economics (Academic)	University of Edinburgh

COMPUTATION SKILLS

Matlab, R, and Stata

LANGUAGES

English (Native)
Chinese Mandarin (Native)

DISSERTATION COMMITTEE (ALPHABETICAL BY SURNAME)

Xu Cheng, Associate Professor in Economics
133 South 36th Street, PCPSE Room 620
Philadelphia, PA 19104
215-898-6775
xucheng@econ.upenn.edu

Amit Gandhi, Professor in Economics
133 South 36th Street, PCPSE Room 622
Philadelphia, PA 19104
215-898-7409
akgandhi@sas.upenn.edu

Frank Schorfheide, Professor in Economics
133 South 36th Street, PCPSE Room 621
Philadelphia, PA 19104
215-898-8486
schorf@econ.upenn.edu