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Graduate Student Coordinator: Robert Herbst, rherbst@uchicago.edu, (773) 834 1972

Personal Information: Male, Republic of Korea (South)

Education

The University of Chicago, 2014 to present
Ph.D. Candidate in Economics
Thesis Title: “Identification and estimation of average effects in dynamic random coefficient models”
Expected Completion Date: June 2020

M.Sc., Statistics, The University of British Columbia, 2014
B.S., Economics, Korea University, 2012

References:

Professor Stéphane Bonhomme (Primary Advisor)	Professor Alexander Torgovitsky
University of Chicago	University of Chicago
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Professor Guillaume Pouliot
University of Chicago
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Teaching and Research Fields:

Primary fields: Econometrics
Secondary fields: Applied Microeconomics

Teaching Experience:

Spring, 2018	Topics in Econometrics (graduate), University of Chicago, Teaching Assistant for Stéphane Bonhomme
Winter, 2018	Topics in Microeconometrics (undergraduate), University of Chicago, Teaching Assistant for Thibaut Lamadon

Autumn, 2017	Topics in Microeconometrics (undergraduate), University of Chicago, Teaching Assistant for Thibaut Lamadon
Spring, 2017	Applied Microeconometrics (undergraduate), University of Chicago, Teaching Assistant for Juanna Schrøter Joensen
Winter, 2017	Topics in Microeconometrics (undergraduate), University of Chicago, Teaching Assistant for Thibaut Lamadon
Autumn, 2016	Topics in Econometrics (graduate), University of Chicago, Teaching Assistant for Stéphane Bonhomme
2012 to 2014	Elementary Statistics (undergraduate), University of British Columbia, Teaching Assistant for Eugenia Yu

Research Experience and Other Employment:

Summer, 2014 University of British Columbia, Research Assistant for Nancy Heckman

Honors, Scholarships, and Fellowships:

2019 Reid Economics Fellowship
2014 to 2019 Social Sciences Fellowship
2012 to 2014 International Partial Tuition Scholarship

Professional Activities:

Conference and Seminar Presentations:

2019 Optimization-Conscious Econometrics Conference

Language and Computer Skills:

Computer Skills:

R, C++, Matlab, Stata

Languages:

English (Fluent), Korean (native)

Publications:

Lee, W., Greenwood, P. E., Heckman, N., & Wefelmeyer, W. (2017). Pre-averaged kernel estimators for the drift function of a diffusion process in the presence of microstructure noise. *Statistical Inference for Stochastic Processes*, 20(2), 237-252.

Research Papers:

“Identification and estimation of average effects in dynamic random coefficient models” (Job Market Paper)

Dynamic fixed effect models are popular in empirical research. However, they allow for unobserved heterogeneity only in the intercept but not in the coefficients, although the coefficients are important parameters such as Cobb-Douglas coefficients of firm's production function or return to education in Mincer equation. This paper studies a dynamic fixed effect model where both its intercept and coefficients are heterogeneous, which is called a dynamic random coefficient model. It is shown that the model is partially identified when the length of panel data is fixed, and the sharp identified set of the model is characterized. The characterization does not require any support restriction. A computationally feasible estimation and inference procedure is proposed, which is applied to life-cycle earnings and consumption dynamics using Panel Study of Income Dynamics (PSID) dataset. The estimates suggest that there is large heterogeneity in earnings persistence and consumption behavior across households and that there is correlation between the

two. A calibration of structural life-cycle model is performed to make sense of the estimation results.

Work in Progress:

“Global optimization algorithm for interactive fixed effects models”

Interactive fixed effects models are panel data models that allow individual and time fixed effects to appear multiplicatively, which generalizes differences-in-differences (DID) models frequently used in empirical research. A serious computational challenge faced by interactive fixed effects models is that the least squares estimator requires a researcher to globally minimize a non-convex objective due to the fixed effects entering multiplicatively. The challenge requires the researcher to minimize the least squares criterion with multiple starting values, and yet the researcher is not convinced of its global optimality. This paper proposes an estimation algorithm for interactive fixed effects models that globally minimize the least squares criterion. The algorithm does not depend on the starting value and, more importantly, provide certificate of global optimality for the least squares estimator.

“Identification and estimation of binary choice models with heterogeneous state dependence and partial effects”

Panel data binary choice models allow researchers to account for heterogeneity in their binary decisions, such as household's decision to supply female labor in the labor market. The literature about the model mainly focused on binary models with heterogeneity in levels, which means that it does not capture heterogeneity in the state dependence and partial effect of regressors such as household's willingness to maintain their decision over time or to change their decision in response to exogenous shocks and policies. This paper studies a binary choice model that allows heterogeneity in state dependence and partial effect of regressors. The identified sets of causal parameters such as average marginal effects are characterized, and an estimation method for the identified sets are proposed. The estimation method allows for continuous regressors.