Jaepil Lee

Click here for the latest CV
jaepil.lee.0315@gmail.com
https://jaepillee0315.github.io/
+82 10 2964 5851, +1 412 539 5121

Employment

Research Fellow, Korea Institute for International Economic Policy 2025-Present

Education

Ph.D. Economics, Carnegie Mellon University 2025
minor in Statistics and Machine Learning
M.S. Economics, Carnegie Mellon University 2020
MSc Economics, London School of Economics 2017
B.B.A. Business Administration, B.S. Mathematics, Korea University 2016

Research Interest

Applied Microeconomics (Labor, Health, Public), Applied Econometrics, Structural Estimation

Research Projects

"A Structural Analysis of Opioid Misuse: Health, Labor, Policy, and Misperception on Opioid Misuse Risk" (Job Market Paper, link)

Presented at: 2025 DSE Summer, 2025 UNC-Chapel Hill, 2025 KLI, 2025 KIEP, 2025 KIPF, 2024 MEA, 2024 SEA (Structural Micro)
Award: William W. Cooper Doctoral Dissertation Award (CMU)
Grant: Tepper Health Care Initiative ($14,000)

Abstract: I study how health, labor status, and perception of the risk of opioid misuse jointly shape opioid misuse behavior and how policy can respond. I develop and estimate a dynamic model of opioid misuse and labor supply with endogenous mortality risk and stochastic misperception of the risk of opioid misuse by combining multiple restricted data sets. I decompose the effects of three aggregate changes between 2015 and 2019: increased opioid mortality risk from opioid misuse, expansion of state-level prescribing restrictions, and cross-state variation in illicit opioid prices. I find that the observed decline of opioid misuse rates is almost entirely explained by higher mortality risk from opioid misuse. State-level restrictions on opioid prescribing reduce opioid misuse by the healthy group, but that effect is almost entirely offset by the unemployed and unhealthy group substituting toward illicit opioids, resulting in unequal consequences. Illicit opioid price plays no role. By shutting down the misperception channel, opioid misuse would decrease by 20 percent, suggesting a new policy channel in combating the opioid epidemic.

Last updated: September 2025

"Estimating Dynamic Discrete Choice Models with Subjective Beliefs under Finite Dependence"

Abstract: I propose a novel estimation strategy for estimating a dynamic discrete choice model whose transition probabilities exhibit 1-period finite dependence, and the economic agents' perceived transition probabilities may deviate from rational expectations. Estimating dynamic discrete choice models where the perceived transition probabilities differ from rational expectations is challenging because the transition probabilities are now a function of structural parameters that need to be estimated along with utility parameters. I extend the two-step estimation strategy in Arcidiacono and Miller (2011) to overcome this challenge by iterating between i) finding the finite dependence paths for the conditional value function contrasts and ii) estimating the structural parameters given the set of conditional value function differences. I illustrate the method using a parsimonious infinite-horizon dynamic discrete choice model with a terminal state with stochastic perception bias.

"Identification of Dynamic Discrete Choice Models with Quasi-Hyperbolic Discounting under Finite Dependence"

Abstract: I generalize the representation theorem in dynamic discrete choice models in Arcidiacono and Miller (2019) that incorporates quasi-hyperbolic discounting. The generalized version extends to the present-biased model where the agent is "sophisticated," and Aricidiacono and Miller (2019) becomes a special case. Then, I show identification results given two-period finite dependence and exclusion restriction in a finite horizon model. Monte Carlo simulation shows that the exclusion restriction is strong enough to separate the discount factor and present bias.

"Externality in Sending Children Back Home: A Structural Approach to Foster Care Incentives"

Abstract: This paper examines the unintended consequences of foster care policy in the U.S. on children aimed at reunifying families. Although child abuse and neglect are rare, the recurrence and foster readmission rates are notably high. This raises concerns over the policy's efficacy in children's safety and health. Leveraging the Child and Caregiver Outcomes Using Linked Data (CCOULD) published by the U.S. Department of Health and Human Services, this study aims to (1) assess the impact of child maltreatment and foster care re/admission on children's health; (2) evaluate whether Medicaid data can be used to predict future child maltreatment; (3) build a dynamic model of foster care system that flexibly captures its institutional incentive to send children back to their families and incentive to care for children's welfare, and (4) examine how would additional information from Medicaid change foster care system's decision on children and how much it would change children's welfare.

"Sufficient Conditions for Identification of Dynamic Discrete Choice Models under Finite Dependence"

Abstract: This paper investigates the role of finite dependence paths in identifying dynamic discrete choice models. I prove constructively that a maximum number of these paths exists for identification in a discrete state space. The number of finite dependence paths that provide information for identification grows exponentially by the number of states and choices. This growth explains the lack of consensus on the number of paths for reliable identification. In the one-period finite dependence setting, identification of flow utilities is achieved through the full-rank condition of the linear system of equations for conditional value function differences. By examining a two-period finite dependence setting as a special case of multiple-period finite dependence, I demonstrate methods for determining the identification of utility primitives.

Presentations

2025: Dynamic Structural Econometrics Summer Conference, UNC-Chapel Hill, Korea Labor Institute, Korea Institute of International Economic Policy, Korea Institute of Public Finance, 2024: MEA, SEA

Research Experience

Research Assistant to Rebecca Lessem	Feb 2021-Jul 2021
Research Assistant to James Albertus (PNC Research Assistantship)	Dec 2020-Feb 2021
Research Assistant to Rachel Leah Childers	Dec 2018-Jan 2019

Teaching Experience

Instructor (4.64/5.0)			
Principles of Microeconomics	Undergraduate		Summer 2021
Teaching Assistant		*Instructor*	
Econometrics III (Structural Models)	Ph.D.	Robert Miller	S22, S21
Econometrics II	Ph.D.	Robert Miller	F22, F21, F20, F19
Dynamic Competitive Analysis	Ph.D.	Stephen Spear	F20
Microeconomics I	Ph.D.	Stephen Spear	F20, F19
Computational Method for Economists	Ph.D.	David Childers	S20
Statistical Decision Making	MBA	Dennis Epple	S21, S20
Strategic Corporate Management	MBA	Robert Miller	F22, S22, S21, S20
Trade and Investment Strategy	MBA	Robert Miller	F22, F20, F19
Principles of Microeconomics	Undergraduate	John Gasper	F20

Mentorship & Outreach

Research Mentor (Pro bono)	Lumiere Education	2025-present

Honors

William W. Cooper Doctoral Dissertation Award, Carnegie Mellon University	2025
Tepper Health Care Initiative, Carnegie Mellon University	2022-2023
William Larimer Mellon Fellowship, Carnegie Mellon University	2018-2023
Honors Scholarships, Korea University	2009-2013
Seongnam Scholarships, Seongnam Municipal Scholarship Association	2010

Other Positions

University of Wisconsin-Madison	Honorary Fellow	2022-2025
Korea Development Institute (KDI)	Research Associate	Nov 2017-Jul 2018
Seoul Metropolitan Police Agency	Military Service	2013-2015

Other

Citizenship	South Korea
Other Status	U.S. Census Special Sworn Status
Programming	Python, Matlab, Julia, Stata, R
Language	English (fluent), Korean (native), Spanish (basic, DELE B2)

References

Robert A. Miller (Chair)
Carnegie Mellon University
Tepper School of Business
Pittsburgh, PA 15213
ramiller@andrew.cmu.edu

Rebecca Lessem
Carnegie Mellon University
Tepper School of Business
Pittsburgh, PA 15213
rlessem@andrew.cmu.edu

Anh Nguyen
Carnegie Mellon University
Tepper School of Business
Pittsburgh, PA 15213
anhnguyen@cmu.edu