SIWON RYU

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Research Fields

Econometrics; Program Evaluation; Causal Inference; Network Economics; Health Economics

Education

Ph.D. Economics, Rice University	May 2025 (expected)
M.A. Economics, Seoul National University	2020
B.A. Economics, Kyung Hee University	2017

Honors

- John R. Kelly Graduate Student Teaching Prize in Economics, Rice University — 2023
- Robin C. Sickles Award for Best Performance in Qualifying Exams, Rice University — 2022
- Maria Esther and Carlos Linares Award for Best Performance in First-Year Courses, Rice University — 2021
- Graduate Fellowship, Rice University — 2020-Present

Working Papers

"Decomposition of Causal Effect with Interference Accounting for Network Change" (Job market paper)

Abstract: Recent empirical studies emphasize the importance of indirect, or spillover, effects in program evaluation. Most studies assume that the underlying network is exogenous, fixed, or unaffected by the intervention. However, empirical evidence indicates that the treatment can also have significant network effects. This paper studies the identification and estimation of causal treatment effects while explicitly considering possible causal changes in the network resulting from a program. The main finding is the decomposition of the causal effects into two distinct components: the treatment effect when the network remains unchanged and the effect when the treatment alters only the network structure (network effect). This result enhances our understanding of policy/program mechanisms by considering counterfactual scenarios where the network is either altered or remains unchanged due to the treatment. The proposed method applies to both randomized experiments and quasi-experimental designs with parallel trends. A estimation procedure for causal effects and their decomposition is proposed, and its performance is evaluated through Monte Carlo simulations. The methodology is illustrated using data from a program offering savings accounts. The empirical results show that the direct treatment effect is decomposed by a positive pure effect and a negative network effect, which result in insignificant estimate of the total direct effect.

"Local Average Treatment Effects with Imperfect Compliance and Interference" (Submitted, *Journal of Econometrics*)

"Direct and Indirect Treatment Effects with Social Interaction"

Work in Progress

"Heterogeneous Parental Labor Supply Responses to Children's Severe Health Shocks: Evidence from Administrative Data from South Korea" with Jungmin Lee and Hyuncheol Bryant Kim

"Financial Development and Trade Network Formation" with Daeeun Bae

Teaching and Research Experience

Teaching Assistant, Rice University   2021-Present
—— Econometrics I (G), Econometrics II (G)
Teaching Assistant, Seoul National University   2018-2019
—— Econometrics (G), Topics in Econometrics (G)
Teaching Assistant at Kyung-Hee University   2015
—— Macroeconomics I (UG), Macroeconomics II (UG)
Research Assistant with Professor Yoon-Jae Whang, Seoul National University   2018-2020
Research Assistant with Professor Jungmin Lee, Seoul National University   2018-2019
—— *"Establishment The Database for The Socio-Economic Level of Korea"* using Database of Korea National Insurance Service (NHIS)
Research Assistant with Professors Jungmin Lee, Hyuncheol Bryant Kim, Jisoo Hwang, Seoul National University   2019-2020
—— *"Job Displacement and The Economic, Health Outcomes"* using Database of Korea National Insurance Service (NHIS)
Science Korea Research Assistantship, Korea Research Foundation   2019-2020
Brain Korea 21 Plus Research, Seoul National University   2018

Professional Experience

Research Assistant, Korea Institute for Industrial Economics and Trade (KIET)   2014

Conferences and Seminars

Brown-Bag seminar, Rice University   2022, 2023, 2024
Texas Econometrics Camp Conference   2024

Skills

Programming: Matlab, Stata, Mata, SAS, SAS-IML, R, Python, Julia, SQL
Others: Git, HTML&CSS
Languages: English (Fluent), Korean (Native)

References

Professor Xun Tang (Chair)	**Professor Isabelle Perrigne**	**Professor Matthew Thirkettle**
Department of Economics	Department of Economics	Department of Economics
Rice University	Rice University	Rice University
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