

SIWON RYU

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Research Fields

Econometrics, Program Evaluation, 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 of a program or policy. Most studies assume that the underlying network is exogenous, fixed, or unaffected by the intervention. However, some 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. 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 simple estimation procedure for causal effects and their decomposition is proposed, and its performance is evaluated through Monte Carlo simulations, and illustrated using data from a program offering savings accounts. The empirical result shows that the direct effect consists of a positive pure treatment effect and a negative network effect, while the indirect effects are not statistically significant.

“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 Daeun Bae

Teaching and Research Experience

Teaching Assistant, Rice University — Econometrics I (G), Econometrics II (G)	2021-Present
Teaching Assistant, Seoul National University — Econometrics (G), Topics in Econometrics (G)	2018-2019
Teaching Assistant at Kyung-Hee University — Macroeconomics I (UG), Macroeconomics II (UG)	2015
Research Assistant with Professor Yoon-Jae Whang, Seoul National University	2018-2020
Research Assistant with Professor Jungmin Lee, Seoul National University — “Establishment The Database for The Socio-Economic Level of Korea” using Database of Korea National Insurance Service (NHIS)	2018-2019
Research Assistant with Professors Jungmin Lee, Hyuncheol Bryant Kim, Jisoo Hwang, Seoul National University — “Job Displacement and The Economic, Health Outcomes” using Database of Korea National Insurance Service (NHIS)	2019-2020
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
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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) Department of Economics Rice University xun.tang@rice.edu	Professor Matthew Thirkettle Department of Economics Rice University matthew.thirkettle@rice.edu	Professor Isabelle Perrigne Department of Economics Rice University isabelle.perrigne@rice.edu
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