

# Paul Sungwook Koh

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## Fields of Interest

Econometrics, Microeconomic Theory, Empirical Industrial Organization

## Education

Ph.D. Economics, Columbia University, 2022 (Expected)

M.Phil. Economics, Columbia University, 2019

M.A. Economics, Columbia University, 2018

B.A. Economics, Yonsei University, 2015

## Job Market Paper

“Stable Outcomes and Information in Games: An Empirical Framework”

**Abstract:** Empirically, many strategic settings are characterized by stable outcomes in which players’ decisions are publicly observed, yet no player takes the opportunity to deviate. To analyze such situations in the presence of incomplete information, we build an empirical framework by introducing a novel solution concept that we call *Bayes stable equilibrium*. Our framework allows the researcher to be agnostic about players’ information and the equilibrium selection rule. The Bayes stable equilibrium identified set collapses to the pure strategy Nash equilibrium identified set under strong assumptions on players’ information. Furthermore, all else equal, it is weakly tighter than the Bayes correlated equilibrium identified set. We also propose computationally tractable approaches for estimation and inference. In an application, we study the strategic entry decisions of McDonald’s and Burger King in the US. Our results highlight the identifying power of informational assumptions and show that the Bayes stable equilibrium identified set can be substantially tighter than the Bayes correlated equilibrium identified set. In a counterfactual experiment, we examine the impact of increasing access to healthy food on the market structures in Mississippi food deserts.

## Working Papers

“Estimating Discrete Games of Complete Information: Bringing Logit Back in the Game”

**Abstract:** This paper proposes an extremely fast and simple approach to estimating

static discrete games of complete information under pure strategy Nash equilibrium and no assumptions on the equilibrium selection rule. We characterize an identified set of parameters using a set of inequalities that are expressed in terms of closed-form multinomial logit probabilities. The key simplifications arise from using a subset of all identifying restrictions that are particularly easy to handle. Under standard assumptions, the identified set is convex and its projections can be obtained via convex programs. Numerical examples show that the identified set is tight. When applied to the entry game between Walmart and Kmart using a real-world dataset, the projections of the identified set can be obtained in less than ten seconds.

## Works in Progress

“Estimating Dynamic Games with Unknown Information Structure”

**Abstract:** This paper studies identification and estimation of a class of dynamic games when the underlying information structure is unknown to the researcher. We introduce *Markov correlated equilibrium*, a dynamic analog of Bayes correlated equilibrium studied in Bergemann and Morris (2016), and show that the set of Markov correlated equilibria coincides with the set of Markov perfect equilibria that can arise when the players observe more information than assumed by the analyst. We leverage the informational robustness property of Markov correlated equilibria and propose an econometric approach for estimating dynamic games with weak assumptions on players’ information. We also propose multiple computational strategies to deal with the non-convexities that arise in dynamic environment. As an empirical application, we apply the framework to study the dynamic entry competition by major coffee chains in the US.

## Publications (Pre-doctoral)

- “Court-appointed Experts and Accuracy in Adversarial Litigation” (with Chulyoung Kim), *International Journal of Economic Theory*, vol. 16, no. 3, September 2020
- “Minimum Asset and Liability Insurance Requirements on Judgment-Proof Individuals When Harm is Endogenous” (with Chulyoung Kim), *Hitotsubashi Journal of Economics*, vol. 60, no. 2, December 2019

## Honors and Awards

- The Dhrymes Econometrics Award, Department of Economics, Columbia University, 2020
- Wueller Teaching Award for Ph.D. Courses (Runner-up), Department of Economics, Columbia University, 2018, 2020
- Best TA in First-Year Graduate Courses (Runner-up), Association of Graduate Economics Students, Columbia University, 2019
- Summer Research Fellow Grant, Program for Economic Research, Columbia University, 2018, 2019
- Summer Research Grant, Microeconomic Theory Initiative, Columbia University, 2019
- Dean’s Fellowship, Graduate School of Arts and Sciences, Columbia University, 2016–2022

Outstanding Research Award, The 7th Korea Health Panel Conference, 2015

National Humanities Academic Scholarship (merit-based), Korea Student Aid Foundation,  
2013-2014

## Teaching Experience

### Instructor

Math Camp (for first-year economics PhD students), Summer 2018 & Summer 2019

### Recitation Instructor for PhD-level Courses

Math Methods for Economists, Fall 2018 & Fall 2019;

Introduction to Econometrics II, Spring 2018

### Recitation Instructor for Undergraduate-level Courses

Advanced Microeconomics, Spring 2020 & Spring 2021;

Introduction to Econometrics, Fall 2020;

Intermediate Microeconomics, Fall 2017 & Spring 2019

### Tutor

Graduate-level econometrics and math methods

## Departmental/University Service

Student organizer for Microeconomics Colloquium, Econometrics Colloquium

## Skills

Languages: English (fluent), Korean (native), Japanese (beginner)

Software: R, Matlab, Julia, Python, Stata

## Miscellaneous

Military service, Republic of Korea Army 3rd Artillery Brigade, Jan 2010–Nov 2011

Citizenship: US, Republic of Korea

## References

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