Andreas Petrou-Zeniou

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Education

Ph.D. Economics   **June 2030**
Massachusetts Institute of Technology

S.M. (Master of Science) Computational and Applied Mathematics (Joint with A.B.)   **June 2024**
University of Chicago
GPA: 3.93

A.B. (Bachelor of Arts) Economics (Honors)   **June 2024**
University of Chicago
GPA: 3.97

Research Interests

Econometric theory; industrial organization; empirical macroeconomics

Working Papers

A Two-Step Approach to Inference on Multiple Winners with Applications to Economic Mobility (with Azeem Shaikh)

While policymakers and researchers are often concerned with conducting inference based on a data-dependent selection, a strictly larger class of inference problems arises when considering multiple data-dependent selections, such as when selecting on statistical significance or quantiles. Given this, we study the problem of conducting inference on populations selected according to their ranks, which we dub the inference on multiple winners problem. In this setting, we encounter both selective and simultaneous inference problems, making existing approaches either not applicable or too conservative. Instead, we propose a novel, two-step approach to the inference on multiple winners problem, with the first step modeling a key nuisance parameter driving selection, and the second step using this model to derive critical values on the errors of the winners. In simulations, our two-step approach reduces over-coverage error by up to 96% relative to existing approaches. In a stylized example on job training, we demonstrate that existing approaches partially apply, and that our novel two-step approach is broadly applicable and yields informative confidence sets. In a second application, we apply our two-step approach to revisit the winner's curse in the Creating Moves to Opportunity (CMTO) program. We find that, after correcting for the inference on multiple winners problem, we fail to reject the possibility of null effects in the majority of census tracts selected by the CMTO program.

A Novel Proof of Border's Theorem via Generalized Network Flows

We show that the network flow approach to proving Border's theorem generalizes to standard Borel type spaces, rather than simply finite type spaces. This proof highlights the relationship between the Radon-Nikodym theorem and Border's theorem.

Presentations and Invited Talks

2025	International Seminar on Selective Inference

Awards and Honors

University of Chicago Summa Cum Laude	2024
University of Chicago David S. Hu Prize	2024
University of Chicago Gary Becker Scholar	2023, 2024
University of Chicago Phi Beta Kappa (Junior Inductee)	2023
University of Chicago Robert Maynard Hutchins Scholar	2022
University of Chicago Dean's List	2020-2024

Languages

English: Fluent
Greek: Fluent
French: Proficient

Citizenship

United States of America - Republic of Cyprus