



THE UNIVERSITY OF GEORGIA  
DEPARTMENT OF STATISTICS

## *Colloquium Series*

September 14<sup>th</sup>, 2023  
4:00 PM, Room 204, Caldwell Building

### **Dr Rik Sen**

Associate Professor with the Department of Finance at the University of Georgia

### **Estimating the causal effect on a proportional change in probability**

#### **-- an application to measuring vaccine effectiveness**

Instrumental variables analysis and other similar techniques, such as regression discontinuity design (RDD), have become important in finance and economics for obtaining credible causal estimates using observational data. This talk will first introduce a situation where the standard RDD falls short of producing a consistent estimator for the desired quantity of interest -- measuring vaccine effectiveness. We will introduce a simple and nuanced extension to the conventional RDD to address this shortcoming. We will point out other benefits of using such a technique in this context as well as emphasize the accurate interpretation of the estimates obtained, outlining their interpretive boundaries. Finally, we will touch upon our ongoing work that employs similar extensions to the instrumental variable methodology in finance and economics contexts.

#### **About the Speaker**

Dr. Rik Sen is an Associate Professor of Finance at the Terry College of Business, University of Georgia. Before joining Terry, he held positions at the University of New South Wales in Sydney and the Hong Kong University of Science and Technology. Rik earned a Bachelor's in Statistics from the Indian Statistical Institute, an MBA in Finance from the Indian Institute of Management, Calcutta, and a Ph.D. in Finance from New York University.

Rik's research interests span across Corporate Finance and Household Finance, primarily as an empirical researcher. He is also interested in advancing statistical methods used in these fields. He has published in premier finance journals such as the Journal of Financial Economics and the Review of Financial Studies. Furthermore, his work has appeared in a general-interest journal, Science Advances. His work has also won best paper awards at conferences hosted by the Northern Finance Association and the Financial Research Network.



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