Department of Mathematics,
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Department Colloquium

Xuming He

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Covariate-adjusted Expected Shortfall: Some Recent Developments

Abstract:

Expected shortfall, measuring the average outcome (e.g., portfolio loss) above a given quantile of its probability distribution, is a common financial risk measure. The same measure can be used to characterize treatment effects in the tail of an outcome distribution, with applications ranging from policy evaluation in economics and public health to biomedical investigations. Expected shortfall regression is a natural approach of modeling covariate-adjusted expected shortfalls. Because the expected shortfall cannot be written as a solution of an expected loss function at the population level, computational as well as statistical challenges around expected shortfall regression have led to stimulating research. We discuss some recent developments in this area, with a focus on a new optimization-based semiparametric approach to estimation of conditional expected shortfall that adapts well to data heterogeneity with minimal model assumptions.

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Research Areas

Statistics