

## HKUST ECON Seminar

6 May, 2026, 3:00 - 4:30 pm

### Uniform Inference for Almost Stochastic Dominance

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#### Abstract:

This paper develops a uniformly valid inference framework for Almost Stochastic Dominance (ASD). ASD relaxes classical stochastic dominance by allowing small violations of dominance inequalities and has been widely used in empirical finance and welfare analysis. However, statistical inference for ASD is challenging because the dominance conditions involve nonlinear inequality restrictions with boundary constraints, leading to non-regular asymptotic behavior. Standard pointwise asymptotic approximations based on the functional delta method fail to deliver uniform validity, particularly near the boundary of the dominance region. We propose a joint testing procedure for the necessary and sufficient conditions characterizing ASD and establish its uniform asymptotic validity under general sampling schemes, including weakly dependent time series. Our approach employs uniform bounding and bootstrap methods that remain valid under drifting sequences of distributions and do not rely on least-favorable configurations alone. We further develop uniformly valid inference for a  $\textit{measure of deviation}$  from ASD, which quantifies the minimal tolerance level required for almost dominance to hold. The framework is extended to introduce inference for an  $\textit{ASD horizon index}$ , which identifies the minimal investment horizon at which one distribution almost stochastically dominates another. Monte Carlo simulations demonstrate that the proposed procedures achieve accurate size control and improved power relative to existing methods. An empirical application illustrates the relevance of uniform inference for horizon-dependent dominance relations.