OBTAINING CONDITIONS FOR THIRD ORDER STOCHASTIC DOMINANCE

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Abstract

Stochastic dominance is used to rank choices using conditions based on certain preferences. However, it is difficult to apply because stochastic dominance is impractical to rank a large set of distributions. These rankings have beneficial uses in areas such as economics and finance. To further the understanding and the practicality of stochastic dominance, more models are needed, in particular estimators for third order stochastic dominance (TSD). Our research focuses on finding estimators for TSD. We began by finding pairs of distributions that failed first order stochastic dominance (FSD), second order stochastic dominance (SSD), and passed TSD. We then examined their parameters to find common conditions within each example. Further exploration led to a theorem and several conjectures that represent necessary but not sufficient conditions to obtain TSD. If proven, our conjectures can be used to develop criteria for future estimation models for TSD.