Sensitivity Analysis of Treatment Effects with Endogenously Censored Duration Outcome*

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Abstract

With a non-randomly censored duration outcome, we perform sensitivity analyses on various treatment effect parameters when the dependence between the event time and the censoring variable is modeled by a family of Archimedean copula. Bounds of policy effects are characterized as smooth functionals of the copula graphic estimands that satisfy an index sufficiency condition. We then provide an estimation procedure and establish uniform inference theories for the proposed semiparametric estimators. Confidence bands are constructed using multiplier bootstrap. The estimators demonstrate good finite sample properties in Monte Carlo simulations. The methodology is applied to study the efficacy of treatment protocols for acute lymphoblastic leukaemia.

Keywords: Observational studies, dependent censoring, copula graphic estimator, single index model.

JEL Classification: C14, C21, C34, C41

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