If You Cannot See It, Is It Time Invariant?

Duration Models with Dynamic Unobserved Heterogeneity

PRELIMINARY AND INCOMPLETE

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ABSTRACT: The paper considers time varying unobservable individual effects in survival analysis. The effects are modeled as positive Levy processes. Once the Levy measure is assumed to be known up to a finite dimensional parameter, the elements of interest are nonparametrically identified by solving an integral equation. The parameters of interest are functions modeling observed characteristics, functions modeling unobserved shocks, and the finite dimensional parameter characterizing the Levy measure. The paper presents a list of applications dealing with a behavioral perspective on unemployment, cost minimization in optimal repair models, health and early retirement, and reliability and contract theory.