

Estimation of Continuous-time Markov Processes Sampled at Random Time Intervals

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We introduce a family of generalized-method-of-moments estimators of the parameters of a continuous-time Markov process observed at random time intervals. The results include strong consistency, asymptotic normality, and a characterization of standard errors. Sampling is at an arrival intensity that is allowed to depend on the underlying Markov process and on the parameter vector to be estimated. We focus on financial applications, including tick-based sampling, allowing for jump diffusions, regime-switching diffusions, and reflected diffusions.