

Inference for generalized duration models

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Abstract

In this paper, first a class of generalized duration models is introduced and it is shown that the recently proposed duration models such as quadratic stochastic condition duration (SCD) models and long memory SCD models are special cases. We also develop new classes of multiplicative random coefficient Autoregressive Conditional Duration (RCACD), additive RCACD and doubly stochastic Autoregressive Conditional Duration (ACD) models. Martingale estimating function method provides a convenient framework for studying inference for nonlinear time series models Thavaneswaran and Abraham (1988). Moreover, when the information about the higher order conditional moments of the observed process become available combined estimating functions are more informative than the component estimating functions (see Thavaneswaran et al. (2012)). The estimating function method is used to study the joint estimation for the parameters of ACD, multiplicative RCACD, additive RCACD and doubly stochastic ACD models.

Key Words: Estimating Functions, Nonlinear Time Series, Doubly Stochastic, Information, Random Coefficient, ACD Models