

# Regression Models for Time Series Analysis

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**Abstract.** A relatively recent statistical development is the important class of models known as generalized linear models (GLM) introduced by Nelder and Wedderburn (1972). GLM provides under some conditions a unified regression theory suitable for continuous, binary, categorical, and count data. The theory of GLM was originally intended for independent data, but it can be extended to dependent data, under some assumptions, using partial likelihood. Regarding an extension to time series, a key ingredient is the fact that the partial likelihood score process is a martingale with respect to the sequence of histories generated by a time series and its time dependent random covariates. The extension to time series will be accompanied by some real data examples.