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Some nonlinear threshold autoregressive time series models for actuarial use. (English)

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Summary: This paper introduces nonlinear threshold time series modeling techniques that actuaries can use in pricing insurance products, analyzing the results of experience studies, and forecasting actuarial assumptions. Basic "self-exciting" threshold autoregressive (SETAR) models, as well as heteroscedastic and multivariate SETAR processes, are discussed. Modeling techniques for each class of models are illustrated through actuarial examples. The methods that are described in this paper have the advantage of being direct and transparent. The sequential and iterative steps of tentative specification, estimation, and diagnostic checking parallel those of the orthodox Box-Jenkins approach for univariate time series analysis.

MSC:

62P05 Applications of statistics to actuarial sciences and financial mathematics

Cited in **9** Documents

62M10 Time series, auto-correlation, regression, etc. in statistics (GARCH)

Software:

FinTS

Full Text: [DOI](#)

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