

A Non-Linear Stochastic Inflation Approach for Actuarial Science-2 (GMM Variance-Covariance Matrix)

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Extended Abstract:

Since Wilkie (1986) introduced the first investment model of stochastic inflation which emerges the keen attribution in actuarial development and investment models for applications by the actuaries. Two empirical features of monthly inflation rates are dynamic dependence on the level of the series and seasonal fluctuations. We propose a constructive model scenario, termed multiplicative seasonal self-exciting threshold autoregressive (SEASETAR), which enables both features simultaneously. Moreover we adopt the multiple time-series modelling approach suggested by Tiao & Box (1981) to construct a stochastic investment model for price inflation, share dividends, share dividend yields. In our core asymmetry-model we can generate a special case of a general non-multiplicative SETAR model. The usefulness of multiplicative SEASETAR models is demonstrated by analyzing five data series of monthly inflation rates. One of these series corresponds to a country with hyperinflation episodes. To get a better understanding of the basic features underlying the fitted SEASETAR models we also perform a dynamic analysis. The feature of my conclusion segment is the area of focusing the relation of their individual tests and methodology which embarks the further Monte Carlo simulation methodology and result with some relevant statistical background and I wish to show the proposed conjecture of the low-tests power asymmetry which would enable the GMM variance-covariance matrix from a type of collinearity that greatly attenuates the preciseness of the parameter estimates by Smith (1999, Journal of Econometrics 93) and Belsley (1991). □

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