

Modeling Inflation Rates As Long Memory Seasonal Processes

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In long memory time series, present values are strongly correlated with distant past. These series are stationary, although its autocorrelation functions are similar to nonstationary processes, which can lead to misspecified models. Long memory processes are especially useful in economics and finance. These processes are often modeled by ARFIMA models, which generalize ARIMA models by allowing non-integer values of the differencing parameter. Also, the series may present seasonal long memory. The so called SARFIMA models may handle with this pattern through a non-integer seasonal differencing parameter, but these kinds of models are not still so used. This paper aims to work with non-seasonal and seasonal long memory, through SARFIMA models. To do so, inflation rates of United States and United Kingdom are used, and forecasting results are used for comparison. SARFIMA and SARIMA models have similar performances, but SARFIMA models have the advantage of being more parsimonious, since the AR and MA coefficients are not necessary for good fitting and forecasting.

Keywords: long-term memory models, SARFIMA, inflation, forecasting.