

EVALUATION OF GENERALIZED DURBIN-WATSON TEST

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- **ABSTRACT:** *This study aimed to assess the rates of type I error and power of the test generalized Durbin-Watson (DWG) to detect autocorrelations up to fourth order. To this end, were evaluated different scenarios simulated 2000 series, with different sample sizes ($n = 10, 20, 50, 100, 200, 500$ and 1000 observations) and variance ($\sigma^2 = 0.01, 0.5$ and 1). In each configuration the DWG test was applied and the number of significant results (type I error and power) in 2000 samples, given significance 1%, 5% and 10% was computed. In general, it is noted that the type I error rate was close to the nominal values adopted only in the case where the test is used to verify the autocorrelation of the first order. For other situations, the test is considered accurate. In relation to the power of the test, it is found that it is powerful when the sample has higher values of n at 20, 50 and 500 in detecting autocorrelations of the first, second and third orders, respectively. In the detection of fourth order autocorrelation, the test is not adequate for any sample size evaluated in this study.*
- **KEYWORDS:** *Autocorrelation; Monte Carlo; simulation.*

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