

# **The impact of the presence of autoregressive conditional heteroscedasticity (ARCH) effects on spurious regressions**

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## **Abstract**

Spurious (nonsensical) regressions with independent random walks or even with stationary series are well known. However, how their spuriousity is affected by nonlinearity in series has been scantily addressed. In this study, we examine, using Monte Carlo analysis, the effect of autoregressive conditional Heteroskedasticity (ARCH) on nonsensical regressions and we find that ARCH can neutralize most of spuriousity. Specifically, our analysis of finite sample behavior of the t-ratio in a spurious regression framework where ARCH effects are included in a Data Generating Process (DGP) model and Monte Carlo experiments show that large ARCH effects somehow weaken the degree of spuriousity. This will have implications for unit root and cointegration analysis. Our simulations suggest that many of the regressions in the literature, based on individual predictor variables, may be spurious.