

# **NONLINEAR DYNAMICS IN US MACROECONOMIC TIME SERIES**

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This paper investigates whether the inherent non stationarity of the US macroeconomic time series may entirely explained by simple stochastic nonlinear models (like GARCH).

Applying the numerical tools of the analysis of dynamical systems to long time series for the US, we reject the hypothesis that the uncorrelated and homoskedastic residuals of the estimated GARCH models contain no structure. Contrary to the theories that attribute the source of the irregular behavior of the economic system to erratic factors, we are not able, using GARCH models, to obtain truly random residuals. Given this evidence we put forward the possibility that seemingly but not truly random residuals could be, in principle, better controlled and forecasted in the short run.

JEL Classifications: C22, E13, E32