Long memory estimation in a non-Gaussian bivariate process

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Abstract

The main objective of this paper is to analyze fluctuations of foreign currency exchange rates and to identify / describe the dependence structure in stochastic processes associated with the foreign exchange market. Specifically, the study focuses on the dependence relationship between two currencies and the stochastic process underlying them. A general novel methodology is introduced, and shown to work satisfactorily on a variety of problems analyzing the bivariate financial time series possibly possessing heavy tails. This methodology can be used as powerful tool to improve the prediction of exchange rate fluctuations, which is key decision taking in monetary and fiscal policy. In the wider spectrum it can help to predict financial crises. The results could also serve to explain why the Purchasing Power Parity theory does not always hold. © 2021 The Author(s)