

Introduction

In a recent paper, Ferreira and Dionísio (2016) investigated how long the memory of USA stock market is. With a 20 years sample, since 1995 to 2014 (with almost 5.000 observations), they computed, sequentially, both linear and nonlinear correlations between return rates and its lags. As usual, they confirmed that linear correlations, measured by Pearson coefficient, quickly tend to zero. However, using detrended cross-correlation analysis (DCCA) and its correlation coefficient, correlations remain significant until, approximately, 150th lag. In this paper, we extend the analysis of that paper by two different ways: firstly, we use an extended panel of countries, with all the G7 countries (Canada, France, Germany, Italy, Japan and United Kingdom, besides the referred USA); secondly we also extend the sample of analysis – beginning on 1972 and ending on 2015, in a total of 11479 observations.

This kind of analysis is inserted in a great group of studies that have the objective to study the behavior of financial markets. In fact, a larger amount of studies is dedicated to the Efficient Market Hypothesis (EMH), which is one of the most important hypotheses in financial economics. According to EMH, it is not possible to identify any deterministic pattern in its time series behavior (implying that EMH is verified in its weak form if). In other words, it means that, through arbitrage, agents could not obtain systematic abnormal profits using past information (Fama, 1970).

As previously referred, we can find in the literature a large amount of studies dealing with this problem. This analysis lasts for over a century: probably the study of Bachelier (1900) is the first one that tries to explain the random walk behavior of stock prices. Although with some interval span, some other studies corroborated this important finding: Fama (1963), Osborne (1964) or Granger and Morgenstein (1964) are just some of the most important studies on this theme, in the middle of the 20th century. These and other studies stated that, when linear autocorrelation exist between return rates, they quickly disappear.