RANDOM WALK THEORY: EMPIRICAL EVIDENCE FROM THE GOLD MARKET

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Abstract

The paper investigates empirically evidence for or against the random walk theory in the gold market. The paper looks at whether there are periods when gold returns follow the random walk and periods and when it deviates from the random walk theory (mean reverting). For the purpose of meeting these objectives, two approaches are considered: In the first approach, the collected data (from January 1971 to November 2010) is tested for stationarity using the Augumented-Dickey Fuller test. In the second approach a Garch model with time-varying properties is used to capture periods when the random walk may be true and periods when it may be false. The Garch model with time-varying parameters approach shows the presence of mean reversion in log gold returns over the period January 1971 to December 1994. It shows a random walk process as of January 1995. This approach does not depend on the period under consideration. This study concludes the existence of mean reversion for gold returns over the period 1971 to 2004 and a random walk as of January 2005 according to the Garch modeling approach.