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Long-range dependence in returns and volatility of global gold market amid financial crises

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Abstract

Using sampled historical daily gold market data from 07-03-1985 to 06-01-2015, and building on a related work by Bentes (2016), this paper examines the presence of long-range dependence (LRD) in the world's gold market returns and volatility, accounting for structural breaks. The sampled gold market data was divided into subsamples based on four global crises: the September 1992 collapse of the European Exchange Rate Mechanism (ERM), the Asian financial crisis of mid-1997, the Subprime meltdown of 2007, and the recent European sovereign debt crisis, which hit the world's market with varying effects. LRD test was carried-out on the full-sample and subsample periods using three semiparametric methods - before and after adjusting for structural breaks. The results show insignificant evidence of LRD in gold returns. However, very diminutive evidence is found for periods characterized by financial/economic shocks, with no significant detections for post-shock periods. Collectively, this is indicative that the gold market is less speculative, and hence could be somehow less risky for hedging and portfolio diversification.

Key words: long-range dependence; gold returns; financial crisis; volatility; structural breaks.

JEL classification codes: C22, G10

1. Introduction

From time immemorial, gold has been noted as a store of wealth, medium of exchange, unit of value, and possess features to serve as alternative investment for assets such as stocks, bonds, and metal commodities. In fact, Baur and Lucey (2010) and Baur and McDermott