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Bitcoin fluctuations and the frequency of price overreactions

Abstract

This paper investigates the role of the frequency of price overreactions in the cryptocurrency market in the case of BitCoin over the period 2013–2018. Specifically, it uses a static approach to detect overreactions and then carries out hypothesis testing by means of a variety of statistical methods (both parametric and non-parametric) including ADF tests, Granger causality tests, correlation analysis, regression analysis with dummy variables, ARIMA and ARMAX models, neural net models, and VAR models. Specifically, the hypotheses tested are whether or not the frequency of overreactions (i) is informative about Bitcoin price movements (H1) and (ii) exhibits no seasonality (H2). On the whole, the results suggest that it can provide useful information to predict price dynamics in the cryptocurrency market and for designing trading strategies (H1 cannot be rejected), whilst there is no evidence of seasonality (H2 cannot be rejected).

Keywords: Cryptocurrency, Bitcoin, Anomalies, Overreactions, Abnormal returns, Frequency of overreactions