Guglielmo Maria Caporale & Alex Plastun

Momentum effects in the cryptocurrency market after one-day abnormal returns

Abstract

This paper examines whether there exists a momentum effect after one-day abnormal returns in the cryptocurrency market. For this purpose, a number of hypotheses of interest are tested for the Bitcoin, Ethereum and Litecoin exchange rates vis-à-vis the US dollar over the period 01.01.2015–01.09.2019, specifically whether or not: (H1) the intraday behavior of hourly returns is different on abnormal days compared to normal days; (H2) there is a momentum effect on days with abnormal returns, and (H3) after one-day abnormal returns. The methods used for the analysis include various statistical methods as well as a trading simulation approach. The results suggest that hourly returns during the day of positive/negative abnormal returns are significantly higher/lower than those during the average positive/negative day. The presence of abnormal returns can usually be detected before the day ends by estimating specific timing parameters. Prices tend to move in the direction of the abnormal returns till the end of the day when it occurs, which implies the existence of a momentum effect on that day giving rise to exploitable profit opportunities. This effect (together with profit opportunities) is also observed on the following day. In two cases (BTCUSD positive abnormal returns and ETHUSD negative abnormal returns), a contrarian effect is detected instead.

Keywords Cryptocurrency, Anomalies, Momentum effect, Abnormal returns, Patterns