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On stock price overreactions: frequency, seasonality and information content

ABSTRACT

This paper explores the frequency of price overreactions in the US stock market by focusing on the Dow Jones Industrial Index over the period 1990–2017. It uses two different methods (static and dynamic) to detect overreactions and then carries out various statistical tests (both parametric and non-parametric) including correlation analysis, augmented Dickey–Fuller tests (ADF), Phillips-Perron (PP) tests, Granger causality tests, and regression analysis with dummy variables. The following hypotheses are tested: whether or not the frequency of overreactions varies over time (H1), is informative about crises (H2) and/or price movements (H3), and exhibits seasonality (H4). The null cannot be rejected except for H4, i.e., no seasonality is found. On the whole, it appears that the frequency of overreactions can provide useful information about market developments. A sharp increase in the number of overreactions occurs in crisis periods. The frequency of overreactions is linked to the VIX index and therefore could be used as an alternative measure of market sentiment and market fear, and it also affects stock returns. Further, our findings provide evidence supporting market inefficiency since price predictability can allow investors to design profitable trading strategies; in addition, the fact that the frequency of overreactions varies over time is consistent with the Adaptive Expectations Hypothesis.

KEYWORDS: Stock markets, anomalies, overreactions, abnormal returns, VIX, frequency of overreactions