

Applying a logistic regression approach to predict extreme performers on the Johannesburg Securities Exchange

Abstract

In this study we follow a relatively unexplored approach to test market efficiency on the Johannesburg Securities Exchange (JSE), namely an 'extreme performer' approach. We apply cross-sectional regression analysis on fifty firm-specific factors for each share that was listed on the JSE during 1994 through 2011 to identify those factors that are commonly associated with extreme performers, where an extreme performer is defined as a share that returned at least +6% (named 'winners') or less than -5% (named 'losers') during any one-month period. After creating two independent subsamples, we use the first subsample and the identified factors to develop logistic regression models to predict extreme performers. Our models are tested by applying it on the second subsample to filter potential extreme performers. The filtered shares are subsequently used to construct respective 'winner' and 'loser' portfolios. Monthly rebalancing is applied and performance is measured over the period under review. The results show that the winner portfolio significantly outperforms while the loser portfolio significantly underperforms the benchmark portfolio. Risk-adjusted performance evaluation further shows that the excess abnormal return obtained cannot be explained by previously suggested asset pricing models. Our results imply that the South African equity market is either inefficient or that the asset pricing models tested are incorrectly specified.