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On the Profitability of Momentum Strategies and Optimal Leverage Rules

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Title

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Abstract

Paper [I] assesses the returns of the Opening Range Breakout (ORB) day trading strategy. A trader that trades the ORB strategy seeks to identify large intraday price movements and trades only when the price moves beyond some predetermined threshold. We present an ORB strategy based on normally distributed returns to identify such days, and find that our ORB trading strategy result in significantly higher returns than zero when applied to a long time series of crude oil futures contracts.

Paper [II] assesses the returns of the Opening Range Breakout (ORB) day trading strategy across volatility states of the underlying asset. We calculate the average daily returns of the ORB strategy for each volatility state when applied on long time series of crude oil and S&P 500 index futures contracts. We find an average difference in returns between the highest and lowest volatility state of around 200 basis points per day for crude oil, and of around 150 basis points per day for the S&P 500.

Paper [III] performs empirical analysis on short-term and long-term Commodity Trading Advisor (CTA) strategies regarding their exposures to unanticipated risk shocks. When separating between short-term and long-term CTA strategies, this paper finds that only short-term CTA strategies provide a significant, and consistent, exposure to unanticipated risk shocks. Our result suggests that an investor should allocate to short-term CTA strategies rather than to long-term CTA strategies during equity market crisis situations.

Paper [IV] posits that it is possible to obtain an optimal leverage factor for financial instruments equipped with embedded leverage. By applying the Kelly criterion for optimal leverage, we show that there exists a uniquely optimal level of leverage for maximizing the long-run profit of embedded leverage instruments. Our empirical analysis shows how an optimal level of embedded leverage can increase the profitability of Exchange Traded Products.

Paper [V] systematically analyses the effect of leverage on long-run profit when trading the Opening Range Breakout (ORB) day trading strategy. This paper clarifies the relation to two optimal leverage rules proposed for maximizing trading profit; the Kelly criterion and the Optimal fraction criterion. Our empirical analysis shows how leverage can increase day trading profit in-sample and out-of-sample when applied to a long time series of DAX 30 index futures contracts.

Keywords

Bootstrap, Exchange Traded Products, Kelly criterion, Money management, Opening Range Breakout strategies, Optimal fraction criterion, Time series momentum.

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