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The performance of moving average rules in emerging stock markets

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Abstract

The question of whether active trading strategies outperform the more naïve

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indices. In addition, this profitability persisted for longer moving averages, suggesting that trends in share returns were larger and more persistent in emerging markets.

Notes

¹ A number of heuristics are said to be employed by all decision-makers. For example, according to the representative heuristic, individuals generalize about an event by reference to how representative it is of similar events in their past experience. According to the anchoring heuristic, individuals arrive at estimates by starting from an initial value and then making adjustments upwards or downwards to yield a final answer. Individuals are also prone to the available heuristic whereby they assess the probability of an event by the ease with which instances or occurrences can be brought to mind (Kahneman and Tversky, [1982](#)).

² For a review of the developments in behavioural finance, the reader is referred to Van der Sar ([2004](#)).

³ Given the focus of this study, only the literature pertaining to moving average rules is reviewed. A more detailed review of the different literatures can be found in Elton and Gruber ([1995](#)).

⁴ Van Horne and Parker (1967) also examined the performance of a modified version of this rule

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⁵ Brock... , 0), (1, 50,
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⁷ The rules examined were (1, 50, 0), (1, 100, 0), (1, 150, 0), (1, 200, 0), (2, 100, 0), (2, 150, 0), (2, 200, 0), (5, 200, 0) and (1, 50, 1).

⁸ In this study, the number of buy and sell signals was very similar for three of the four exchanges studied and, for the Variable Length Moving Average rules, the majority of both buy and sell returns were statistically significantly different from those earned by following a buy-and-hold strategy. These findings differ from the conclusions reached by other studies (Brock et al., [1992](#); Hudson et al., [1996](#); Coutts and Cheung, [2000](#)). In these studies, the number of buy signals was greater than the number of sell signals (suggesting a bullish market) and sell signals were the most powerful for prediction purposes.

⁹ Specifically, the authors examined daily index prices for Argentina, Brazil, Chile, India, Korea, Malaysia, Mexico, Philippines, Taiwan and Thailand.

¹⁰ In this study, Ratner and Leal examined the same 10 Variable Length Moving Average rules as Brock et al. ([1992](#)). A key difference between these studies is the interpretation of the band. While Brock et al. ([1992](#)) and indeed most studies which examine moving average rules, evaluated each rule with a trading band around the returns, Ratner and Leal employed a trading band around the Standard Deviation (SD). This resulted in more conservative findings. For example, without the band, 50 of the 60 trading strategies had buy signals greater than sell signals as compared to only 37 strategies when the band was included.

¹¹ Indices were selected for examination rather than individual shares because of data availability. In addition, any individual analysis of data employed in the current study would be compared to the results of the investment in terms of this article may not be representative of the country. In particular, the index by the IFC; these



In addition, the analysis should supply some insight into the theoretical levels of efficiency of the markets covered.

¹² In an analysis of trading strategies in 11 European stock markets, Fifield et al. (2005) concluded that no single trading rule could persistently exploit predictable behaviour in share prices, 'since the profitability of the different rules examined varied dramatically from market to market' (p. 17). Most practitioners would argue that a substantial amount of background knowledge is required before attempting to apply any moving average rule to a specific country index.

¹³ The variations examined were (1, 50, 0), (1, 50, 1), (1, 150, 0), (1, 150, 1), (5, 150, 0), (5, 150, 1), (1, 200, 0), (1, 00, 1), (2, 200, 0) and (2, 200, 1).

¹⁴ The cost per trade information for Argentina, Chile, India, Korea, Malaysia, Mexico, the Philippines, Taiwan, Thailand, Japan and the United States is taken from Ratner and Leal (1999). The estimates of transaction costs in the United Kingdom are from Hudson et al. (1996), and costs in Indonesia are from the Standard and Poors (2005). All remaining estimates come from information on the countries stock exchange website (Jakarta Stock Exchange, 2001). In particular, information on transaction costs for Hong Kong are from www.hkex.com.hk, for South Africa from www.jse.co.za, for Sri Lanka from www.lanka.net, for Turkey from www.ise.org and for Zimbabwe from www.zse.co.zw.

¹⁵ The analysis reported in this article was undertaken in foreign currency terms. That is, the article adopts a UK perspective, rather than a local perspective, in order to

measure by moving average analysis was also undertaken in local sterling. The results of those arising from using the moving average rule, both the sign and the magnitude of the results. Results based on the moving average rule.

¹⁶ There were 10 trading days of 50 days: (1, 50, 0), (1, 50, 1) and (10, 50, 0) were examined, the total



¹⁷ Closer investigation of the UK results shows that none of the 36 moving average rules outperformed the buy-and-hold strategy. The largest value for the rule profit (5, 50, 5) was only 63.84%, as compared to 210.62% following the buy-and-hold strategy. Similarly, for the United States, all 36 moving average rules failed to better the returns from following the buy-and-hold strategy. For example, the largest rule profit (5, 50, 1) was 182.02% as compared to 364.53% for the corresponding buy-and-hold strategy. Results for the individual rules are available from the authors on request.

¹⁸ This finding holds for all 36 variations of moving average rule studied.

¹⁹ There are several reasons which could explain the success of the moving average rule in Japan. For example, since the early 1990s, Japan's economy has faced its worst slump since World War II. Problems such as low demand, deflation, bankruptcies and bad debt burdens in the banking sector have plagued the economy that used to rank among the top three in the world. Given such difficulties in the macroeconomy, it is little wonder that the security market is suffering. Presumably, the long downward trend in Japanese security prices is being exploited by the moving average rule to yield profits. However, attempts are being made to reform the financial system in the hope that the economy can be reactivated through an increase in the efficiency of the market (Financial Times, [2003](#)). However, although the poor macroeconomic performance of Japan may be a plausible reason for the success of the moving average strategies, Bessembinder and Chan ([1995](#)) reported that the moving average rules were successful in predicting share price movements in Japan during an earlier period from January 1975 to December 1989, when a bull market was present. This finding suggests

²⁰ At 100 days, the moving average rule yields greater returns than the buy-and-hold strategy in the Philippines, Thailand, and Taiwan. In the Philippines, the moving average rule yields 100 days, nine times the returns of the buy-and-hold strategy. In Thailand, the moving average rule yields 100 days, nine times the returns of the buy-and-hold strategy. In Taiwan, the moving average rule yields 100 days, nine times the returns of the buy-and-hold strategy.

²¹ Over the period 1975-1989, the moving average rule yields less than the buy-and-hold strategy in Argentina and Hong Kong. In Argentina, the moving average rule yields less than the buy-and-hold strategy. In Hong Kong, the moving average rule yields less than the buy-and-hold strategy. In Argentina, the moving average rule yields less than the buy-and-hold strategy. In Hong Kong, the moving average rule yields less than the buy-and-hold strategy.



over two long-run periods, while South Africa and Turkey have successful mean moving average results over one long-run period, with the buy-and-hold profit exceeding the moving average profits for the other three long-run periods.

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