Does Market Timing Beat Dollar Cost Averaging?

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Abstract

This paper explores several methods for investing monthly cash contributions in an equity index, such as the S&P 500 or the Nikkei 225. The dollar cost averaging (DCA), three variations of market timing (MT1, MT2, and MT3), and 12-month perfect foresight (PF) are examined, and they are built on the same assumptions, such as monthly cash inflows, no borrowing of cash, and no selling of equity. The PF outcomes, unachievable by human beings, serve as optimal boundaries. Our results show that in both the U.S. and Japanese markets, the PF dominates the DCA, while the MTs tend to deliver similar results as the DCA. Thus, the DCA seems to be a compelling investment method.

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I. Introduction

Dollar cost averaging (DCA) is a popular investment method in real-world practice. However, in the research literature, the DCA seems less effective than the lump sum (LS), asset allocation (AA), and various market timing methods. Specifically, we categorize the research literature into three veins as follows.

First, the DCA seems inferior to the LS and AA methods. Constantinides (1979) points out that in a rational expectations framework, the LS is an optimal strategy in which 100% of total wealth is invested in risky assets at the beginning. The DCA is suboptimal, in which the total wealth is divided into a series of small investments in risky assets over time. Rozeff (1994) argues that if the market has a positive expected risk premium, the LS policy is superior to the DCA policy. Leggio and Lien (2003) find that the DCA consistently remains an inferior strategy to the LS, using risk-adjusted performance measures. Bierman and Hass (2004) illustrate that if the cash fund is currently available, the optimum decision is to invest the entire sum, and dividing the initial sum into segments for future investment is not recommended. Panyagometh and Zhu (2016) demonstrate that the DCA is analogous to the AA strategy in which about 50% to 65% of total wealth is invested in risky assets once at the beginning and the rest in riskless assets. They find that the AA strategy has a better risk-return tradeoff than the DCA.

Second, the DCA seems inferior to various market timing methods, which contain rebalancing, value averaging, augmented DCA, enhanced DCA, modified DCA, etc. Brennan, Li, and Torous (2005) document that the DCA is dominated by the rebalancing strategy in which 50% of wealth is invested in the market portfolio, and 50% in cash, and the portfolio is rebalanced monthly to maintain the proportions. Chen and Estes (2007) show that the value-averaging strategy generates

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