Value investing and technical analysis in Taiwan stock market [☆]

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ABSTRACT

Unlike the U.S. and most developed countries, Taiwan stock market has been widely documented to have no value premium. Prior studies on the value premium typically adopt a conventional approach proposed by Fama and French (1992), which suggests a buy-and-hold strategy with annual rebalancing. We argue that a sophisticated investor can do better (obtain higher returns) than a simple buy-and-hold strategy by timing the market with the help of some technical analysis. Specifically, we show that an application of a moving average timing strategy to portfolios sorted by book-to-market (BM) ratios could generate higher returns than the buy-and-hold strategy. Using common stocks listed on the Taiwan Stock Exchange (TWSE), we confirm that the moving average timing strategy does substantially outperform the buy-and-hold strategy. Taking advantage of this observation, we propose a zero-cost portfolio constructed by buying the highest BM portfolio, and short-selling the lowest BM portfolio based on trading signals issued by the moving average rule, and demonstrate that such a new investment strategy can produce significantly positive returns. Robustness of results obtained in this paper is further verified and consolidated by extending the empirical study with a different currency, alternative lag lengths, transaction cost, subperiod analysis, business cycles and market timing.

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1. Introduction

The value premium, which states that stocks with high book-to-market (BM) ratios yield higher returns than those with low BM ratios, has been extensively documented in both the U.S. and international stock markets over the past two decades. Fama and French (1992, 1996), Lakonishok, Shleifer, and Vishny (1994) and Loughran (1997) all show that the value premium is a prevalent phenomenon in the U.S. market. As for the international evidence, Chan, Hamao, and Lakonishok (1991), Roll (1995), Mukherji, Dhatt, and Kim (1997), Bauman, Conover, and Miller (1998), Fama and French (1998), and Daniel, Titman, and Wei (2001) all demonstrate the existence of the value premium, either in a specific country outside the U.S. or on an aggregate basis across countries.

The evidence of the value premium in emerging markets or Asian markets, however, is somehow mixed and less pronounced. For example, out of the 20 emerging countries being examined, Rouwenhorst (1999) finds that high BM stocks have higher returns than low BM stocks in 16 of them, but significantly positive premiums only exist in Brazil, Korea, Malaysia and Zimbabwe. Furthermore, some countries such as Colombia, Pakistan, Portugal and Thailand even carry negative premium. For Asian markets, Mukherji et al. (1997), Chen and Zhang (1998), Chui and Wei (1998) and Ding, Chua, and Fetherston (2005) show that high BM stocks outperform growth stocks in Japan, Hong Kong, Korea, Malaysia and Singapore, but not in Indonesia, Taiwan and Thailand.

Brown, Rhee, and Zhang (2008) show that, after controlling for size and liquidity effects, there exist significant value premiums in Hong Kong, Korea and Singapore, but value discounts in Taiwan.

One thing in common among the aforementioned studies is the adoption of a conventional approach proposed by Fama and French (1992), which suggests a buy-and-hold strategy with annual rebalancing. Specifically, at the beginning of July in a given year, an individual firm's BM ratio is evaluated as its book value of equity divided by its market value of equity at the end of December in previous fiscal year. After assigning individual stocks into a particular portfolio according to their BM ratios, investors are assumed to sell short the low BM portfolio, and to use the proceeds to invest in the high BM portfolio simultaneously from July of year t to June of year $t + 1$ The value premium is then defined as the return of such a zero-cost value-minus-growth portfolio, which is assumed to be held for one year with annual rebalancing.

But, is the buy-and-hold strategy necessarily good for investors? What if the value premium exhibits some predictable patterns? Indeed, Cohen, Polk, and Vuolteenaho (2003) document statistically strong results concerning the predictability of returns on the value-minus-growth strategy. They show that the expected return on the value-minus-growth strategy is high when the spread in BM ratios is wide. In addition, if some sophisticated investors are able to "time the market", a better trading strategy for investors might be to invest in the value-minus-growth strategy only when the value premium is positive and significant.

Therefore, the main question we address in this paper is whether trading signals generated by some technical analyses can contribute incremental value to the value-investing strategy, even in a market absent of the BM effect.

Prior studies have already demonstrated the usefulness of technical analysis on some investment strategies. For example, Brock, Lakonishok, and LeBaron (1992), Brown and Jennings (1989), Lo, Mamaysky, and Wang (2000) and Neely, Rapach, Tu, and Zhou (2011) all find that technical analysis adds value in investing stock or market returns. Zhu and Zhou (2009) find that a trading rule based on the moving average (MA) provides additional information for the fixed-proportion strategy that follows Markowitz's (1952) modern portfolio theory and Tobin's (1958) two-fund separation theorem. Han, Yang, and Zhou (forthcoming) show that an application of the MA rule to portfolios sorted by volatility can generate reliably higher returns than the traditional buy-and-hold strategy. However, the usefulness of technical analysis documented in these studies is theoretically or empirically conducted based on particular strategies that have been documented to be profitable with prior data. But, if a given style investing strategy has been verified to produce no premium in one country, does such investment strategy combined with technical analysis become profitable?

We answer this question by linking value strategies based on BM portfolios and MA signals in Taiwan stock market, which is chosen for two main reasons.