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Profitability of return and volume-based investment strategies in China's stock market

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Abstract

We examine the informational role of the interaction between past returns and past trading volume in the prediction of cross-sectional returns over intermediate horizons in China's stock market. Our results show that low-volume stocks outperform high-volume stocks, volume discounts are more pronounced for past winners than for past losers, low-volume stocks experience return continuations, and high-volume winners exhibit return reversals. Our results are robust to risk adjustments relative to Fama and French's three-factor model, and to stock exchange as well as large stock sub-samples. Our findings are not entirely consistent with the literature, which are likely to result from the market characteristics, in particular, the short-sales prohibition and the dominance of individual investors in the market.

JEL classification: G11; G14; G15
Keywords: China's stock market; Investment strategy; Asset pricing; Trading volume

1. Introduction

Academics and practitioners have long recognized that trading volume provides valuable information about future market movements. A large body of finance literature has shown that the relation between trading volume and expected stock returns is in general negative (Amihud and Mendelson, 1986; Conrad et al., 1994; Datar et al., 1998;

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Brennan et al., 1998), although there is little agreement on how the relation should be interpreted. Amihud and Mendelson (1986), Campbell et al. (1993), and Brennan et al. (1998) attribute the volume–return relation to market microstructure effects, whereas some researchers suggest that this relation is consistent with the behavioral finance theories (e.g., Barberis et al., 1998; Hong and Stein, 1999; Baker and Stein, 2002).

Stock prices and trading volume are jointly determined by the same market dynamics. However, the informational role of the interaction between past prices and trading volume in the prediction of future price changes has not been well understood. A recent study of Lee and Swaminathan (2000) provides evidence on the role of the interaction between intermediate-horizon return predictability and trading volume in the U.S. markets, and document that high- (low-) volume stocks earn lower (higher) returns, momentum strategies are more profitable for high-volume stocks than for low-volume stocks, and past trading volume predicts both the magnitude and the persistence of future price momentum over longer horizons. However, their intriguing findings do not appear to fit into any existing theoretical framework. A better understanding of these issues could benefit from more out-of-sample evidence.

This paper uses a sample of all A-shares traded on the Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) over the July 1994–December 2000 interval, and examines the interaction between return predictability and trading volume over intermediate horizons (3- to 12-month). A study of China's stock market is motivated by the following considerations. First, the market is usually independent of the U.S. stock market, and thus provides an adequate out-of-sample test of the results of Lee and Swaminathan (2000). Second, China's stock market has experienced rapid expansion, and is ranked the second largest in Asia (after Japan) in about a decade after formal stock exchanges were set up; however, little is known about its stock price behavior. With China's entry into WTO, its stock market increasingly attracts foreign investors' attention because of China's fast development and enormous growth opportunities. An understanding of stock pricing in China's market becomes important in particular for global institutional investors. Lastly, several market characteristics, for example, the short-sales prohibition and the dominance of individual investors, make the study of China's stock market illuminating with regard to discriminating between competing explanations for the volume–return relations.

We find that low-volume stocks outperform high-volume stocks, consistent with the liquidity premium hypothesis of Amihud and Mendelson (1986), Datar et al. (1998), Brennan et al. (1998). However, volume discounts are larger in magnitude for past winners than for past losers, which differ from the finding of Lee and Swaminathan (2000) that shows the opposite result from the U.S. data.[1] We also find that low-volume stocks experience return continuations. In contrast, high-volume winners exhibit strong return reversals, rendering a momentum strategy unprofitable for high-volume stocks. This result is contrasted with the Lee and Swaminathan's finding that high-volume stocks experience stronger return momentum than low-volume stocks. Our results hold true after risk adjustments relative to Fama and French's (1993) three-factor model, and are robust to stock exchange as well as large stock sub-samples.

[1] Volume discount is the difference in mean returns between high- and low-volume stocks.