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The high-volume return premium: Does it exist in the Chinese stock market?

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ABSTRACT

In this paper we examine the information content of extreme trading activity in the Chinese stock market. We find that zero-investment portfolios that are constructed by buying high-volume and selling low-volume stocks do not generate positive returns (high-volume return premium), which is apparent in developed markets. In contrast, we find that there is a high-volume return discount in speculative stocks (i.e., small-cap stocks, stocks with low institutional ownership and stocks with low analyst-coverage). These stocks tend to have a high degree of over-valuation in the short term followed by a relatively low return. In support, we find a larger discount in the winners group than in the losers group.

1. Introduction

Trading volumes transmit vital information about movements in stock prices. The anomaly of the high-volume return premium (HVRP) that [Gervais et al. \(2001; GKM hereafter\)](#) presented demonstrates the predictive power of abnormal volumes for future returns. In other words, stocks that experience an unusually high trading volume over a day or a week tend to outperform stocks that experience an unusually low trading volume in the following month(s). [Kaniel et al. \(2012; KOS hereafter\)](#) and [Huang et al. \(2011\)](#) provide global evidence that confirms the prevalence of the HVRP in developed markets but they fail to find evidence in emerging Asian markets. Admittedly, the emerging markets possibly have different market characteristics and institutional backgrounds, but how these differences influence the HVRP phenomenon is understudied.

As the biggest emerging economy and the second-largest stock market in Asia after Japan, the Chinese market mainly consists of individual investors ([Ng and Wu, 2007](#)).¹ Furthermore, it is argued that the primary drivers of the Chinese stock market are market rumours and/or individual investor's sentiments rather than fundamentals ([Ng and Wu, 2010; Jiang and Kim, 2015; D. Liu et al., 2016; Zhu and Niu, 2016](#)). Meanwhile, [Mei et al. \(2009\)](#) and [Pan et al. \(2016\)](#) indicate that speculative trading affects asset prices in the Chinese stock market. So far, empirical work using the Chinese market data shows a number of inconsistencies, with either the evidence found in the US market (e.g., [Wang and Cheng, 2004; Wang and Chin, 2004](#)) or the standard asset-pricing theory (e.g., [Xiong and Yu, 2011](#)).

Prior literature on the HVRP argues that, following a volume shock, the increased investor base and the increased sharing of risk among investors would decrease the cost of capital and, therefore, increase the firm's value (this is the *investor recognition hypothesis*

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¹ According to the statistics provided in December 2015 by the World Federation of Exchanges (<http://www.world-exchanges.org/statistics/monthly-reports>), the Shanghai and the Shenzhen Stock Exchange are ranked as the fourth and fifth largest in the world, and they are the second and third largest in Asia after the Tokyo Stock Exchange by market capitalisation.

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offered by KOS, which will be reviewed in more detail in the next section). If the increased investor base consists of all short-term or speculative investors, then their trading behaviors could temporarily affect the firm's value and fail to bring the expected long-term positive impact. Therefore, the HVRP may not exist in a market that is populated with speculative investors, such as the Chinese stock market. Consequently, it is worthwhile investigating whether such an anomaly exists in a market that displays speculative characteristics and which is of great importance to the world economy.

To investigate whether or not a high-volume return premium exists in the Chinese stock market, we follow the portfolio analysis in GKM and KOS, vary the reference period within a spectrum between 10 and 50 days, and compare stocks from two stock exchanges (i.e., the Shanghai Stock Exchange and the Shenzhen Stock Exchange) during three sample periods (two sub-periods and a full sample period spanning the period from 1991 to 2015). Having confirmed the non-existence of the HVRP, we further look at those stocks which tend to have speculative attributes (i.e., small-cap stocks, stocks with low institutional ownership, and stocks with low analyst-coverage).

Our findings are summarised as follows. First, we do not find the HVRP in the Chinese stock market. Consistent with the evidence from Chinese stock market in KOS, and Wang and Cheng (2004), our remote sub-period sample does not exhibit any significant return premium of high-volume over low-volume portfolios. Furthermore, we observe an opposite phenomenon in the recent sub-period sample that KOS does not cover, which is a high-volume return discount (HVRD). Specifically, on average, both high- and low-volume stocks tend to underperform the market and high-volume portfolios perform consistently worse than low-volume portfolios for a period of up to 100 days following their formation day. It is further shown in the analysis of the full sample from 1991 to 2015 that the non-existence of the HVRP prevails and the HVRD can be observed in the small-firm group. These results are invariant to different choices of reference period and different weighting methods in return computation (i.e., zero-investment portfolios or reference return portfolios).

The Shanghai Stock Exchange's (SHSE's) (2013) Joint Research No. 23 uses a proprietary dataset with information on trader identity and it finds that Chinese individual investors tend to speculate on small-cap, new (IPO) and badly performing shares, and they lose money from their irrational trading decisions. If the non-existence of the HVRP and the existence of HVRD are associated with individual speculative trading, then our findings would be more likely to be displayed in those stocks that carry more speculative attributes. We further explore the data on institutional ownership and analyst-coverage, and find supporting evidence for this finding. Stocks with low institutional ownership and stocks with low analyst-coverage are more likely to exhibit a HVRD than stocks with high institutional ownership and stocks with high analyst-coverage.

The seminal work on the relationship between speculative trading and asset prices by Harrison and Kreps (1978) suggests that investors pay prices that exceed their own valuation of the stocks because they anticipate reselling the stock at an even higher price in the future in the presence of short sale constraints. Scheinkman and Xiong (2003) show that heterogeneous beliefs and short-sale constraints jointly create a bubble component in stock prices. In the Chinese market during most of our full sample period, short selling was not permissible and, therefore, it is not surprising that we did not find HVRP. Stocks with low institutional ownership have a tendency to mainly be traded by individual investors who perceive reselling options. Meanwhile, stocks with low analyst-coverage tend to lack a belief-coordinating mechanism (Andrade et al. 2013), leading to a high probability of overvaluation. These speculative investors trade stocks of low institutional ownership and low analyst coverage, mainly small stocks, at a time when their prices have already gone up. The high volume that they drive is followed by a relatively low return when price correction takes place.

While focusing on stocks with low institutional ownerships and stocks with low analyst-coverage, we present further evidence supporting the view that overvaluation is the cause of the HVRD. High-volume small stocks that have had a high daily return in the recent past (i.e., high-volume *winner*s in the small-firm group) are found to have a much larger drop in return following the formation day than high-volume small stocks that have had a low daily return in the recent past (i.e., high-volume *loser*s in the small-firm group). However, low-volume winners in the small-firm group do not exhibit significantly different return patterns from low-volume losers and, therefore, the high-minus-low winner portfolios end up with a significantly larger return discount than the corresponding loser portfolios.

Motivated by the literature on speculative trading, we add additional evidence to the understudied topic of the HVRP in the Chinese stock market. We extend Pan et al.'s (2016) research in two directions. First, we examine the volume effect of individual stocks with respect to their own recent trading activities as opposed to the cross-section of abnormal turnover. Second, we assess not only the statistical and economic significance of the volume–return relation but we also discuss the investment implications. Additionally, compared to KOS, Zhou (2010), and Wang and Cheng (2004), we expand the analysis to cover the full history of stock trading in China and we propose explanations for our findings.

The rest of the paper is organised as follows. Section 2 reviews the relevant literature. Section 3 describes the data collection, sample selection and methodology. Section 4 contains the empirical results. Section 5 discusses further evidence of our findings. Finally, Section 6 concludes the paper.

2. Literature review

An early explanation for the HVRP was proposed by GKM, which was called the *visibility hypothesis*. This explanation relies on Miller's (1977) idea of divergent opinions in the presence of short-sale constraints. That is, due to the divergence of opinions, the holders of a stock on average tend to be the most optimistic about its prospects. With an abnormal trading volume increasing visibility, which attracts potential investors' attention to a given stock, the stock price is likely to rise as the number of potential buyers far exceeds that of potential sellers. This is particularly true if short selling is restricted. The evidence from Asian markets (KOS; Huang et al. 2011) challenges this hypothesis because the HVRP does not exist in Asian markets, where short-selling

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