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Herding of institutional investors and margin traders on extreme market movements

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ABSTRACT

This paper investigates the herding tendency of foreign and domestic institutional investors and margin traders from different herding perspectives by using daily buy and sell data in Taiwan's stock market. Strong evidence indicates that herding phenomenon is closely associated with market conditions, traders' types and firm characteristics. Trading behaviors of institutional investors and margin traders are affected by their own past trades but their trading patterns change when facing large price drops. Margin traders and institutional investors have the tendency to sell past losers upon large market price declines and buy past winners upon large market price rises.

1. Introduction

Price comovements of individual stocks and herding behaviors of market participants have attracted much attention, particularly when the market is experiencing extremely up and down. Investors have a high desire to employ various trading strategies in order to make excess profits and academicians are eager to incorporate investors' behaviors into price generation processes to develop new pricing models. Shleifer and Summers (1990) argue that investors may herd if they follow the same signal or place great importance on recent news. Bikhchandani, Hirshleifer, and Welch (1992) state that agents with peer pressure tend to follow the action of their predecessor and ignore their own information. Devenow and Welch (1996) explain that herding can be a rational coordination among individuals acting on the same external information or a non-rational behavior following mass psychology without fundamental analysis. Nofsinger and Sias (1999) argue that investors engage in herding as a result of irrational responses to sentiments or as a result of security characteristics. Chiang and Zheng (2010) find evidence that most investors in 18 countries herd with the US market in addition to their home markets and market crisis triggers in-crisis country's herding behaviors. Graham (1999) summarizes that people mimic the actions each other because people have the same private information, respond to strong external shocks, follow the action of a leader, or behave irrationally as a result of speculation.

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Past literature provides several theoretical backgrounds to explain why individual stocks move together or why investors herd and trade as a group. Indications of herding in financial markets have been found in different contexts and could be summarized as follows: (i) investors receive the same information and trade in the same direction; (ii) traders follow the action of preceding traders rather than make independent decisions on their own information; (iii) agents move together with the reference group to avoid deviation from their colleagues due to conformity pressures; and (iv) high uncertainty prospect in the catastrophic events forces people move with the market consensus due to less tolerance to risk taking. For related literature, see Shleifer and Summers (1990), Nofsinger and Sias (1999), Bikhchandani and Sharma (2000), Sias (2004), Kim and Nofsinger (2005), Zhou and Lai (2009), Venezia, Nashikkar, and Shapira (2011), Demirer, Kutan, and Zhang (2014), and Yao, Ma, and He (2014).

Specifically, this study adopts three information-related herding measures and three event-related herding measures to investigate traders' herding tendency. The analysis of herding behavior is controlled for market size, share turnover, and return volatility to find whether herding behavior is associated with firm characteristics. Using daily buy and sell data of institutional investors and individual traders, we investigate whether those market participants move together with the market consensus and whether their trades affect stock prices, particularly during extremely up and down periods. A recent study by Venezia et al. (2011) investigates herding tendency among different types of traders (amateurs and professionals) and the effect of firm specific characteristics (size, beta, and unique risk) on herding. Our study covers some similar issues in herding such as institutional investors and individual traders and firm specific characteristics (size, volatility, and share turnover).

We groups the traders as foreign institutional investors, domestic institutional investors (mutual funds and security dealers), and individual investors (margin traders and short sellers). Different groups of market participants receive information with varying quality, interpret information with different perspectives and make decision with different purposes. Both foreign institutions and domestic institutions are considered informed investors with information advantage over individual traders, who are considered less informed and trained. There are three studies closely related to individual investors herding. Li, Rhee, and Wang (2009) find that China's individual investors tend to trade towards the market movement and that institutional investors react asymmetrically to up- and down-markets. Feng and Seasholes (2002) find that China's individual investors herd to buy when prices fall and that individual investors act as liquidity providers. Venezia et al. (2011) find a herding tendency among amateurs and investment professionals but the former herds to a greater extent than the later. They explain that amateurs' herding tendencies may be driven by information search or their irrationally due to “the amateurs' lesser training in economics and finance.”

Our empirical findings contribute to the literature in various ways. First, we provide new evidence on herding behaviors of institutional investors, margin buyers and short sellers and their relation with firm characteristics. The study in margin buyers and short sellers is relatively rare and we add to the herding literature of those traders. Second, for comparing empirical findings, six herding measures are employed from different perspectives in herding literature since herding behaviors result from different causes and lead into different outcomes. Those herding measures from different perspectives would strengthen our understanding of the causes of herding and its effects on price variation. Third, we investigate herding phenomena in extremely up and down markets and analyze how traders respond to extreme market movements. Since Taiwan government makes restricts on exchange rate markets and foreign portfolio investments, our empirical findings will be valuable for emerging markets which regulate foreign portfolio flows in order to prevent large foreign equity flows in and out of their markets. Finally, our study is based on more detailed daily data than previous studies. If the empirical finding of this study differs from those in other markets, it provides new direction on herding phenomena. Otherwise, it adds to the validity of past studies in other markets.

The paper proceeds as follows: Section 2 describes data; Section 3 investigates information-related herding tendencies; Section 4 investigates event-related herding tendencies; Section 5 examines the relationship between stock returns and trades of institutional investors and individual traders; and Section 6 summarizes and makes conclusions.

2. Data analysis

This paper employs daily trading data of stocks, which are actively traded by foreign and domestic institutional investors and margin traders. Sample stocks are listed on the Taiwan Stock Exchange (TSE) and are obtained from TSE and the Taiwan Economic Journal (TEJ) database, a Taiwanese data bank which retrieves trading data of institutional investors and margin traders from TSE on a daily basis. In order to ensure that the analysis is not affected by liquidity problems, the focus is on actively trading stocks by institutional and margin investors. On each day during the sample period, all TSE-listed stocks are ranked by the daily trading volume of foreign investors, of mutual funds, of market makers, of margin buyers, and of short sellers, respectively. Stocks whose trading volume is higher than 10,000 shares from these traders are separately recorded. Thus, on each day, five samples are identified for foreign investors, for mutual funds, for market makers, for margin buyers, and for short sellers, respectively. For any given day on each sample, the data in which the number of selected firms is less than 30 are also excluded for liquidity consideration. The daily stock returns are calculated by taking first-order differenced logs of the closing prices with adjustments for stock dividends and cash dividends. The data cover 2094 trading days and begin on December 12, 2000 when the data are first available and end on May 27, 2009 when the data are most recently released.

Table 1 reports summary statistics for the trading activities and Taiwan's stock market. The mean daily trading volume of 774,983 thousand shares by margin buyers ranks as the highest in the five types of traders, followed by foreigners, mutual funds, market makers and short sellers. Given that margin buyers are the most active traders in the Taiwan market, selected individual investors of margin traders and margin sellers account for 28.08% of market trading volumes relative to 16.76% of selected institutional investors of foreigners, mutual funds, and market makers during the sample period. The trading data also show that foreign investors increase their holdings through time while the trading percentage of margin buyers decreases. In general, the