Investor herding behaviour of Chinese stock market

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ABSTRACT
This paper examines the existence and prevalence of investor herding behaviour in a segmented market setting, the Chinese A and B stock markets. It is the first study to detail the difference in herding behaviour across A and B markets. The results indicate that investors exhibit different levels of herding behaviour, in particular, herding strongly exists in the B-share markets. We also find that across markets herding behaviour is more prevalent at industry-level, is stronger for the largest and smallest stocks, and is stronger for growth stocks relative to value stocks. Herding behaviour is also more pronounced under conditions of declining markets. Over the sample period we are examining, herding behaviour diminishes over time. The results provide some indication to the effectiveness of regulatory reforms in China aimed at improving information efficiency and market integration.

1. Introduction

Understanding the decision making process of various participants in the market has always been a challenging mission for academics and practitioners. Conventional theory of efficient markets asserts that markets are informationally efficient and investors form rational expectations of future prices, and that any new information entering into the market is instantaneously incorporated into expected prices in a homogenous manner. However, the efficient market hypothesis has been disputed both empirically and theoretically,¹ and its major shortcomings in modelling real-life security returns have been noted by numerous past literature (see e.g., Shiller, 1989; Summers, 1986). Behavioural economists however have attributed the imperfections in financial markets to various cognitive biases, human errors and responses. Herding activities among investors have been a popular behavioural explanation for the excess volatility and short term trends observed in financial markets. Investor herding causes prices to deviate from fundamental values and create implications for trading strategies and asset pricing models,² thus it has received great attention in recent years.

Human herding behaviour usually results from a tendency to imitate the actions of others. The definition proposed by Christie and Huang (1995, p31) is “individuals who suppress their own beliefs and base their investment decisions solely on the collective actions of the market, even when they disagree with its predictions”. One line of research explains the presence of herding behaviour among market participants through investor psychology, regarding herding among investors as irrational behaviour. Devonow and Welch (1996), for example, propose that investors disregard their own beliefs and follow other investors blindly due to an intrinsic preference for conformity with the market consensus. Pretcher (2001), on the other hand, seeks to explain herding behaviour from a neuroeconomic perspective. He argues that human herding behaviour, like other primitive instincts for

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¹ For example on its inability to explain persistent anomalies in the market.
² For example, when one invests in a market where participants tend to herd around the market consensus, a larger number of securities are required to achieve the same degree of diversification than in a herd-free market.
survival, results from impulsive mental activity in individuals responding to signals from the behaviour of others, and these impulses are typically faster than rational reflections in emotionally charged situations.

Meanwhile, another line of research treats herding behaviour as rational actions. Followers of this line of argument are of the view that there is an important link between rationality and emotion in decision making, in that psychological factors may be compatible with the optimizing behaviour of the agents. Bikhchandani and Sharma (2000) emphasize the distinction between intentional herding, which results from an obvious intent by investors to imitate others, and spurious herding, in which groups of investors facing similar decision problems and information sets take similar decisions. Banerjee (1992) and Bikhchandani, Hirshleifer, and Welch (1992) argue that while individuals cannot access other investors' private information, such information is revealed through the actions taken by these investors. By observing prior investors' actions, invest/reject cascades can occur depending whether the first few investors all chose to buy/sell. Such herding externality results in inefficient outcomes and the cascades are also path-dependent and idiosyncratic, easy to reverse when more instructive public information enters the market. Yang (2011) argues that herd behaviour of investors is influenced by the precision of costly private signals and signal extraction.

The evidence of herding behaviour among the market participants has direct implication to the market information efficiency as well as asset pricing behaviour. As a relatively new market growing at a staggering speed, the Chinese stock market with its unique macro- and microstructure features provides an interesting setting for the analysis of investor herding behaviour. Previous studies have found that when investors face few alternatives and heavy government involvement, they tend to speculate in the stock market, generating significant volatility (Green, 2003). Thus in a market which has traditionally been characterised by unsophisticated retail investors, heavy regulations and a lack of transparency, and which is now undergoing tremendous amounts of reform, the understanding of how investors behave amidst such process of transition is worthwhile and important.

In this paper we investigate the presence of herding behaviour in the segmented Chinese mainland market, by examining the return dispersion of both A and B share markets. Utilising a recent and comprehensive dataset, we find no evidence of herding in A-share markets but significant evidence of herding in the B-share markets over the period 1999 to 2008. Our investigation shows that herding behaviour is more prevalent at industry level than at market level, among stocks with the largest and the smallest market capitalisation, among growth stocks than value stocks, and during periods of declining stock markets. Our results also reveal that the level of herding diminishes over the sample period, an indication to the effectiveness of regulatory reforms in China aimed at improving information efficiency and market integration.

The remainder of the paper is structured as follows. The next section provides a review of relevant literature regarding herding behaviour. Section 3 presents the institutional background of the Chinese stock market. Section 4 describes the data that will be used in this study. Section 5 outlines the research design and the methodology. Section 6 reports the empirical results. Section 7 concludes.

2. Literature review

2.1. Empirical evidence on herding behaviour

A significant proportion of existing herding literature focuses on specific market participants such as mutual fund managers and financial analysts, due to the relative importance of institutional investors in financial markets, such as the work of Lakoniskok, Shleifer, and Vishny (1992), Grinblatt, Titman, and Wermers (1995) and Wermers (1999). A different strand of the empirical literature, lead by Christie and Huang (1995), investigates herding behaviour in the aggregate market, by looking at how returns on individual stocks cluster around the market return during periods of large price movements. The underlying rationale is that during periods of market stress (defined as the occurrence of extreme returns on the market portfolio), individual investors tend to suppress their own beliefs and investment decisions in favour of the market consensus, causing individual stock returns to cluster around the overall market return. In contrast, rational asset pricing models predict that the dispersion in returns during normal periods will increase with the absolute value of the market return, if individuals trade on their own private information. Thus herding can be detected through the examination of equity return dispersions, especially around periods of large price swings.

To test this hypothesis, Christie and Huang (1995) use the cross-sectional standard deviation of returns (CSSD) as a measure of return dispersion. They isolate the levels of dispersion in the extreme tails of the market return distribution to test whether it differs significantly from the average levels of dispersion that excluded the outermost market returns. They find that dispersions increase significantly during periods of large absolute price changes at both market level and industry level, which is interpreted as evidence against the presence of herding. This finding is further supported by a comparison of actual dispersions with dispersions predicted by the market model, which shows that actual and predicted dispersions are very similar.

Chang, Cheng, and Khorana (hereafter CCK) (2000) adopt a modification of Christie and Huang (1995)'s model. They use the cross-sectional absolute deviation of returns (CSAD) as the measure of return dispersion, and propose a non-linear regression specification for the detection of herding behaviour. Using daily stock price data for 5 international markets (US, Hong Kong, Japan, South Korea and Taiwan), CCK find no evidence of herding in the developed markets (US and Hong Kong), partial evidence in Japan, and significant evidence of herding in the emerging markets (South Korea and Taiwan). They also find that

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3 Since spurious herding is an efficient outcome and is usually driven by changes in fundamentals, this category of herding behaviour is not within the scope of this study.

4 They use daily data from July 1962 to December 1988, and monthly data from December 1925 to December 1988.
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