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Mutual fund herding its impact on stock returns: Evidence from the Taiwan stock market

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ABSTRACT

Using quarterly ownership data which identify identity codes of mutual funds in Taiwan, we investigate mutual fund herding and its impact on stock price. We show that mutual funds tend to follow their own steps in trading rather than follow trades made by other funds. More importantly, evidence of price continuation following mutual fund herd buying suggests that such herding is based on value-relevant information and is consistent with the investigative herding hypothesis. Alternatively, evidence of return reversal following mutual fund herd selling suggests that such herding is non-informational and is consistent with the characteristic herding hypothesis.

1. Introduction

Herding refers to the tendency for investors in a particular group to buy or sell the same stocks at the same time. Prior studies investigating institutional herding have used US data (e.g., Nofsinger and Sias 1999; Wermers 1999; Griffin et al., 2003). While these studies provide important evidence on institutional behavior in the US markets, the applicability of their findings to other markets with different microstructures is questionable. For example, the Taiwan stock market with unique market

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microstructures and low but fast-growing institutional ownership may have different conclusions about institutional behavior and its impacts on stock prices.[1]

The component of investors in the Taiwan stock market is quite different from the US stock market in which institutional investors take a large share. Although mutual funds comprise a small proportion of the trading volume in the Taiwan stock market, where individual investors comprise about 80% of the market volume, a tremendous growth in mutual fund industry has been found recently. For instance, the increase in the fraction of trading value made by mutual funds to total trading value of the market has tripled to 6% in December 2006 from 2% in 1995. More importantly, during our sample period, we show that the average quarterly market adjusted returns on equity funds are 0.80% at the 1% level of significance and that twenty-five out of forty-five quarters in which above 50% of equity funds are able to beat the market. Therefore, unlike the US where overwhelming evidence argues that most mutual funds underperform the market, it seems that mutual funds in Taiwan possess an informational edge over other investors.[2]

Moreover, in Taiwan, mutual funds have to fully disclose their quarter-end stockholdings with the Securities and Futures Commission (SFC), providing an excellent source of trading information for investigation of their trading behavior. We argue that if mutual funds have informational edge in Taiwan, it is intuitively credible that individual investors can gather buy–sell information from fund managers and thereby make profits by following their moves. As a result, the outperformance by mutual funds, unique dataset which indentify mutual funds and the market structural differences among countries allow us to investigate different aspects of mutual fund herding in Taiwan.

This paper contributes to the literature by focusing on the following two important issues. First, we examine the cross-sectional relationship between changes in mutual fund ownership and stock returns to preliminarily assess the profitability of exploiting herding behavior among mutual funds in the Taiwan stock market. Following Nofsinger and Sias' (1999) portfolio analysis, if mutual funds trade with a crowd, then one would expect to see significant differences in their trade imbalances (buying volumes minus selling volumes and scaled by outstanding shares) across portfolios and to see a systematic pattern of change in ownership from low to high trade-imbalance portfolios. More specifically, as herding on a certain stock causes a significant order-flow imbalance, a large change in mutual fund ownership can be reasonably observed. Whereas, if no herding exists, trades induced by non-systematic net-buying or net-selling activities will mostly average out and result in an insignificant change in ownership of the stock. However, one serious concern about portfolio analysis is: Since within a certain period, one can directly observe only institutional buying or selling the same stocks, whether a lead–lag relationship exists among their trading behavior cannot be clearly distinguished (Sias, 2004). In other words, whether institutions trade by following one another or by following their own trading strategy cannot be directly observed from the results of portfolio analysis.

Second, therefore, to complement the portfolio analysis, we follow Sias (2004) to examine lead–lag trades among mutual funds. Unlike methods proposed by Lakonishok et al. (1992) and Wermers (1999) which consider only the temporal dependence of institutional trades, the Sias herding measure accounts for inter-temporal dependence, i.e., cross-sectional correlations across institutional demands over two adjacent quarters. In particular, by the Sias herding measure, one can directly identify whether the sources of cross-sectional correlations over two adjacent quarters result from following either their own or from each other's trades.

In sum, the main findings are: Firstly, mutual funds in the Taiwan stock market do herd. By following Sias (2004), we show that they appear to negatively follow their own steps rather than trades made by

[1] The Taiwan stock market has experienced rapid economic development, and its economy is now comparable to a developed market according to many measures. Its GDP in 2007 was US $383.3 billion and its GDP per capita was US $16,950. At the end of 2007, the total market capitalization of the 698 companies listed on Taiwan Stock Exchange (TWSE) amounted to US $706 billion. The ratio of Taiwan market capitalization to GDP was 162.97% in 2006. In 2007, the total trading value was US $1008.41 billion, representing a market turnover rate of 153.28%. The market P/E ratio was 15.31, sixth among the main Asian exchanges, making Taiwan an attractive marketplace for investors.

[2] Many prior papers have shown the outperformance of Taiwanese mutual fund. For example, Chiao and Lin (2004) surprisingly find that the strategies following SITCs' preceding-day NB information are more profitable than the market and those following FIs' and SDs' within 10 holding days. Consistent with our evidence, Shu et al. (2002) also document that the average return of equity mutual funds in Taiwan generally outperforms that of the value-weighted market index by a large amount. We thank an anonymous referee for this suggestion.