

Mutual Funds Herding and Its Impact on Stock Returns; Evidence from Pakistan

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ABSTRACT

The purpose of this study is to reveal the impact of mutual funds herding on stock returns in prospective of Pakistan. Stock returns has been used as dependent variable, while mutual funds herding as an independent variable. The five years data of mutual funds on monthly bases from 2006 to 2010 has been used in the study. The data has been collected from Business Recorder Newspaper, Karachi Stock Exchange (KSE) and Mutual Funds Association of Pakistan. Herding behavior has been measured by using the pooled variance technique. Descriptive statistics and regression technique have been used for analysis purpose. The results indicate that mutual funds herding has significant and positive impact on stock returns. It has implications for both national and international investors.

KEY WORDS: Mutual Funds, Herding Behavior, Stock Returns, Descriptive Statistics, Regression.

1. INTRODUCTION

For the last two decades, mutual funds has played very important role in financial market and came to be the primary investment opportunity for the small investors. The number of mutual funds came in the market for trading purpose and increased the number of stocks in the market. Mutual funds provided higher benefits in terms of diversification at lower cost and liquidity as compare to the investment in bonds or stocks^[25].

Behavioral Finance has made the foundation of traditional theories of finance. According to behavioral finance, it is the human phenomena to act differently at different time and situation. Herding is like that phenomena. Herding is referred as the collective investment of group of different investors in the same stock. When investors deal with herding behavior, they follow to each other in trading of the stocks^[23].

Empirical literature examines the herding in two tracks. One track considers herding behavior in institutional investors, while other considers herding behavior in individual investor. It is commonly thinking that herding behavior is more dominant in institutional investors as compare to individual investors, because institutional investors have more information about stocks trading than to individual investors^[2].

Institutional investors are the large group of investor. They show their keen interest in the mutual funds. Wermers^[36] raised two questions, which includes “Do institutional investors flock together (Herd), when they trade securities? Do investors follow the lead of others, when they trade?” These questions highlight the herding behavior of the investors in trading of stock. When any investor succeeds to get the positive feedback by taking the prior private information, the other investors also follow to that investor.

Institutional investors have dominance in the stock markets, which compel to understand their trading strategies and their impact on stock prices. Institutional investors deal with herding behavior in trading of stock. Institutional investors behave as irrational investors in the market. This herding behavior of institutional investors destabilizes the stock prices from the fundamental values and the quality of information about stock prices^[34].

The theoretical literature explains the reason of why institutional investors deal with herding behavior or trade together. There are four theories, which explain this phenomenon. First, managers may neglect the information of private sources and prefer to trade with mass in the market, because they want to act differently from others and to avoid reputational risk. Second, managers receive correlated private information to analyze the same indicators. Third, managers may trade in the same direction by gathering private information before trading from well-informed sources. Fourth, institutional investors may avert to the stock due to the lower liquidity and less risky^[36, 34].

On the other hand, individual investors also deal with herding behavior at the time of trading of stocks in the market. Shiller^[29] and De Long et al.^[19] explained many factors, which may affect the investment decision of individual investor like fad and fashion. Shleifer and Summers^[30] identified that recommendations of brokerage house, market experts and recent news may herd the individual investor which ultimately affect the investment decision of the investor.

Nofsinger and Sias^[20] described that herding behavior of individual investors may affect both the discounts of

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closed end funds and the returns of small stock. The empirical evidence supports that there is positive correlation between discounts of closed end funds and the returns of small stock. It also supports that herding behavior of individual investor correlate with the lag value of stock returns.

Herding behavior is an important indicator of inefficiency of the market. When the decision of the investors totally rely on collective information and ignoring the private information, the prices of the stock may be less than the actual price of the stock in the market. Herding behavior also negate the theory of Asset Pricing Model (APM) that the market of real world is efficient. It also made doubtful the accuracy of valuation of stock through asset pricing model^[26].

Investor's dealing with herding behavior may disapprove the theory of Efficient Market Hypothesis (EMH), which consider that all investors having the same information and they are rational. According to this theory, stock prices reveal the true market value^[10]. In the contrary, investors who deal with herding behavior are irrational and prices of the stock do not based on rational market analysis. Investors follow to other investors, not even all the investors in the market are well informed. Prices of the stock away from the fundamental value and overall market destabilize due to herding behavior of the investors^[18].

This study has a wide significance. It will produce the effective information about the effect of herding behavior on trading of stocks. It is beneficial for investors, when they would invest in mutual funds. By getting help from this study, they can get high returns from the investment in mutual funds. It will be an important contribution in the existing knowledge on herding behavior.

The objectives of the study are to examine the herding behavior of mutual funds, empirically investigate the impact and relationship of mutual funds herding with stock returns and suggest the implications for the investors.

Mutual Funds in Pakistan

Shah and Hijazi^[27] have explained the history of mutual funds in Pakistan.

In 1962, Mutual funds were hosted in Pakistan. At first, open end mutual funds National Investment (Unit) Trust was introduced. Investment Corporation of Pakistan (ICP) was the second fund, which introduced in Pakistan in 1966. Number of close end mutual funds was offered by Investment Corporation of Pakistan (ICP), which included 26 close end mutual funds until 1990. In 2000, Government took the decision to wind up the Investment Corporation of Pakistan (ICP).

Government started the privatization of Investment Corporation of Pakistan (ICP) in 2002. The number of 25 closed end funds out of 26 were split by the government into two lots i-e lot A and lot B. ABAMCO limited acquired 12 funds of Lot A. Then, 9 out of 12 funds were merged into single closed end funds with name ABAMCO Capital Funds. In 2003, Investment Corporation of Pakistan (ICP) called the general meeting and disapproved the consolidation of ICP into ABAMCO Capital Funds. Then the government decided to reorganize the ABAMCO Capital Funds and made it closed end trust with name of ABAMCO Growth Funds. The other remaining mutual funds were combined into separate funds with name of ABAMCO Stock Market Funds.

Lot B of ICP Mutual Funds was comprised of 13 closed end funds. "PICIC Asset Management Company" attained the rights of management of all 13 closed end funds. A new single closed end funds was developed by combing of all 13 funds with name "PICIC Investment Funds". After it, "PICIC Asset Management Company Limited" obtained the rights of management of ICP 26 funds. General Meeting was held in June 2004 and developed single closed end funds by combining 26 funds of ICP with name "PICIC Growth Funds". SECP gave the approval of "PICIC Growth Funds" in July 2004.

The remaining part of the paper proceeds as follows. Next section consists of previous research work already done by other authors. Third section entails the data collection, population and sample of the study, model of the study and analysis technique. Fourth section comprises of results of pooled variance technique descriptive statistics and regression model. Last section contains the conclusion of the study.

2. LITERATURE REVIEW

Herding Behavior

Herding behavior is the collective behavior of uncoordinated investors. In the literature, Herding defines as the trading of the group of people in the same way at the same time^[20]. To trade in the similar direction can be divided into intentional and unintentional herding. Scharfstein and Stein^[26] explained intentional herding, argued that funds managers may neglect the information, which is privately available and like to trade with crowd in the market. Another theory stated that funds managers might rely on private information gathered from well-informed managers and behave like others^[3]. Unintentional herding described by Froot, Scharfstein and Stein^[11] that managers may trade with each other's solely because they receive information from private sources.

There are two main approaches to investigate the herding behavior in financial markets. One explores the herding towards the market returns and other related to herding of institutional investors toward specific stock^[8, 32].

Other approaches of herding behavior are rational herding behavior and irrational herding behavior. The rational herding behavior emphasis on externalities that alter optimal decision is making process due to incentive elements or information difficulties. On the other side, irrational herding behavior focuses on psychology of investors. It compares the agents and individuals herding behavior and based on previous rational analysis^[9].

When individuals involve in herding behavior, they neglect the new information and follow to behavior of other people. When people think that crowds are well informed and neglecting the quality, this kind of behavior is adopted. However, classical rational expectations theory explains that it is not possible. It is irrational that one individual cannot be influenced by behavior of others. Once people involved in it, an individual is influenced by the decisions of the majority^[22].

Measuring the Herding Behavior

Many methods have been used to measure the herding behavior in the literature. Most of the studies used the measurement method of Lakonishok, Shleifer and Vishny^[17]. It describes the herding as the average propensity of group of managers to reply (sell) specific stock at the same period of time, like money managers traded individually. The LSV measure depends on trades of market participants over period. LSV herding measure is defined:-

$$HM = |p_{i,t} - E[p_{i,t}] - E|p_{i,t} - E[p_{i,t}]| \quad (1)$$

Where $p_{i,t}$ is quarterly proportion of mutual funds trading i and t , showed buyers. $E[p_{i,t}]$ is proxy for buys proportion bases on expiating. $E|p_{i,t} - E[p_{i,t}]|$ is an adjustment factor, which explains the random variation in the buyers.

Amirat and Bouri^[1] explained the herding measure, which depends on cross sectional dispersion factor sensitivity of volume. Security market line (SML) has been used in measurement method, which is the following:

$$V_i = \alpha_i + \beta_i V_m + \epsilon \quad (2)$$

Where, V_i and V_m are the volume of security and the volume of market respectively. If investors show herding behavior towards the market, then it may be volume of security divert towards the volume of market. Then the equation can be expressed as:

$$V_{i,t} = \beta_i V_m + \epsilon \quad (3)$$

When herding towards the market portfolio, then volume and beta will be biased. The relationship will be as the following:

$$V_{b_{i,t}} / V_{b_{m,t}} = \beta_{b_{i,m,t}} = \beta_{i,m,t} - h_{m,t}(\beta_{i,m,t} - 1) \quad (4)$$

Where, $V_{b_{i,t}}$ is the behaviorally biased volume of security, $V_{b_{m,t}}$ the behaviorally biased volume of market. $H_{m,t}$ is a herding parameter at different time period.

When, $h_{m,t} = 0$, $\beta_{b_{i,m,t}} = \beta_{i,m,t}$, there is no herding, $h_{m,t} = 1$, $\beta_{b_{i,m,t}} = \beta_{i,m,t}$, there is perfect herding.

Let $\delta_{m,t}$ and $\delta_{i,t}$ represent sentiment on the market portfolio and asset I respectively.

$$V_{b_{i,t}} = V_{i,t} + \delta_{i,t}, \text{ and } V_{b_{m,t}} = V_{m,t} + \delta_{m,t} \quad (5)$$

$$\beta_{i,m,t}^b = \frac{\beta_{i,m,t} + s_{i,t}}{1 + s_{m,t}} \quad (6)$$

Where $s_{m,t} = \frac{\delta_{m,t}}{V_{m,t}}$ and $s_{i,t} = \frac{\delta_{i,t}}{V_{m,t}}$ shows the sentiment in the market portfolio and asset relative to trading volume.

The beta herding measure is the following:-

$$H_{m,t} = \frac{1}{N} \sum_{i=1}^{Nt} (\beta_{i,m,t}^b - 1)^2 \quad (7)$$

By using OLS betas, the standardized form of beta herding is the following:-

$$H_{m,t}^* = \frac{1}{N} \sum_{i=1}^{Nt} \left[\frac{\beta_{i,m,t}^b - 1}{\sigma_{\epsilon_{i,t}}} \right]^2 \quad (8)$$

Where, $\sigma_{(\epsilon_{i,t})}$ explains the sample standard deviation of ordinary least square residuals. $\sigma_{(m,t)}$ explains the sample standard deviation of market volume

The other way to measure herding behavior is by manipulating the information comprised in movements of cross sectional stock price. Christie and Huang^[8] empirically investigated the herding behavior in US stock market by using cross sectional standard deviation of returns (CSSAD).

$$CSSD = \sqrt{\frac{\sum_{i=1}^N (R_{i,t} - R_{m,t})^2}{N-1}} \quad (9)$$

Where N signifies the number of companies in the market portfolio, $R_{(i,t)}$ represent the stock returns of firms, while $R_{(m,t)}$ shows cross sectional average of n returns in the market portfolio for day t. This model indicates herding behavior. It would lead to security returns not to diverge from market returns.

Christie and Huang^[8] also explained the following to measure the dispersion in equity returns during different market situations.

$$CSSDt = \alpha + \beta_1 D_t^L + \beta_2 D_t^U + \epsilon_t \quad (10)$$

Where, $D_t^L=1$ if the market returns exist in extreme lower tail, zero otherwise. $D_t^U= 1$ if the market returns exist in extreme upper tail, zero otherwise

The other technique, cross sectional absolute deviation of returns (CSAD), is used to investigate the existence of herding behavior. It based on findings of Christie and Huang^[8] and Chang et al.^[5], which is the following:-

$$CSAD = \alpha + \lambda_1 R_{m,t} + \lambda_2 (R_{m,t})^2 + \epsilon_t \quad (11)$$

Where CSAD represents cross sectional absolute deviation of returns (CSAD) and $R_{m,t}$ shows the cross sectional average returns in the market portfolio. This model explains nonlinear relationship, which exist when herding occurs during market stress.

Mutual Funds Herding and Stock Returns

Strong evidence is available in literature, which explores the relationship of mutual funds herding with stock returns. Wermers^[36] investigated the relationship of mutual funds herding with stock prices and found that average stocks showed little herding behavior, while small stocks showed higher level of herding. With the same view, Hung, Lu b and Lee^[14] explained that stock prices follow to the mutual funds herding and herding base on relevant information. Patro and Kanagaraj^[23] showed strong indication of herding effect in mutual funds industry of India. Managers show herding behavior when they invest in most famous indices or large capitalizations stock. Results also showed that herding affect both buying and selling of stock.

Another aspect of mutual funds herding presented by Chen, Yang and Lin^[6], the impact of herding on stock returns during financial crises was checked in his study and found that herding behavior has positive effect on future industrial returns. Foreign institutional investors established different strategies to stable future industrial returns in days of financial crisis. With the same view, Nofsinger and Sias^[20] studied herding behavior in institutional investors and individual investors and compare to them. Results highlighted that institutional investors showed more herding behavior as compare to individual investors.

Lao and Singh^[18] found that herding behavior depends on market conditions. In Chinese stock market, when investors follow to herding behavior highly then market falls and the trading volume increases. While herding behavior is widespread during large market movements. Hsiehy et al.^[13] studied different stock markets from Asian emerging countries. Results extracted that mutual funds inflows attached with positive stock returns and currency appreciation. It was also find that positive feedback affects the Asian stock markets.

With the same pattern, Oha and Parwada^[21] examined the association of mutual funds flows with stock market returns in Korea. Results showed positive relationship between mutual funds flows and stock market. Warther^[35] analyzed the aggregate the mutual funds flows and security returns. Results of the study showed that securities returns are highly correlated with unexpected cash flow into the mutual funds. Puckett and Yan^[24] investigated the impact of short term institutional herding on stock prices. Results showed that herding behavior significantly affect the efficiency of security prices.

By examining, the herding behavior in trading of banking sector stock in Japanese market, Uchida and Nakagawa^[33] found that city banks showed only irrational herding behavior in bubble period. Ayhan and Kapusuzoglu^[16] found that cross sectional volatility increases when stock index increases during the rising days of market. The results showed that there is nonlinear relationship between herding behavior and Istanbul Stock Exchange (ISE) national 100 Index.

As discussed above, Ghalandari and Ghahremanpour^[12] has studied the effect of herding behavior on investment decisions by selecting the Tehran Stock Exchange (TSE) and suggested that when stocks are buying, the investors would prefer to invest in those stocks, which gives higher dividends and having the adequate capital allocation.

From another point of view, Sheikh, Nazir and Iqbal^[28] related the returns from mutual funds industry with market timings. Results showed negative correlation between trade off stock selection and market timings. It showed less returns of mutual funds as compare to all share index. Jayadev^[15] evaluated performance of mutual funds and analyzed the monthly returns and found that two growth-oriented mutual funds did not show better performance in

terms of total risk.

Borensztein and Gelos^[4] investigated the herding behavior in emerging market, found that behavior of funds is complex and cannot be explained by simple rules. Inflows coexist with outflows. Chiang a, Li b and Tan^[7] examined the herding behavior in the aggregate market. Results showed that investor who has A share showed herding behavior but B share investor not follow to this phenomena. A share investor followed to herding behavior at both time of up and down the market.

Contrary to the above studies, Walter and Weber^[34] found that herding behavior neither stabilize nor destabilize the stock prices. Theoretically, if institutional investors trade in herds, they may stabilize or destabilize the stock prices. They have investigated the herding behavior in German mutual funds industry. Gleasona, Mathurb and Peterson^[12] analyzed the herding behavior among different sectors. Results extracted that investors do not herd during when the market movement higher

With the same point of view, Shyu and Sun^[31] studied institutional investor herding behavior in emerging market and found that institutional investor herding was driven by force rather than desire. The herding intensity negatively correlated with firm size. The study has done in Taiwan stock exchange.

$H_0 = \text{Mutual Funds herding has not significant impact on stock returns.}$

$H_1 = \text{Mutual Funds herding has significant impact on stock returns.}$

3. MATERIAL AND METHODS

The aim of this study is to explain the impact of herding behavior of investors, who deal with mutual funds in Pakistan, on the stock returns. The quantitative approach has been adopted to explain the relationship.

Sample Selection and Data Collection

The population of the study has been comprised of all mutual funds listed in stock exchanges of Pakistan including Islamabad Stock Exchange (ISE), Lahore Stock Exchange (LSE) and Karachi Stock Exchange (KSE), whereas, the sample of the study is consisted of 14 mutual funds companies, listed in Karachi Stock Exchange (KSE), selected on convenient bases.

The five years data of mutual funds on monthly base from 2006 to 2010 has been used in the study. The data has been collected from multiple sources. To calculate stock returns, data of stock prices of companies has been gathered from the Business Recorder Newspaper. To calculate the market returns, data of KSE 100 Index has been collected from Karachi Stock Exchange (KSE). Some sort of circulars to get historical view of mutual funds has been assembled from the Mutual Funds Association of Pakistan.

Variables and Model

The herding behavior of mutual funds has been calculated by using the model of Amirat and Bouri^[1]. It depends on cross sectional dispersion factor sensitivity of the volume.

$$H_{m,t} = \frac{1}{N} \sum_{i=1}^{Nt} (\beta_{i,m,t}^b - 1)^2 \quad (12)$$

Where, $H_{m,t}$ is a herding parameter at different time period.

$$\beta_{i,m,t}^b = \frac{\beta_{i,m,t} + S_{i,t}}{1 + S_{m,t}} \quad (13)$$

Where, $S_{m,t} = \frac{\delta_{m,t}}{V_{m,t}}$ and $S_{i,t} = \frac{\delta_{i,t}}{V_{m,t}}$ shows the sentiment in the market portfolio and asset relative to trading volume.

The relationship of the variables used in the study can be explained by considering the following model.

$$S.R = \alpha + \beta_1 HB + \mu \quad (14)$$

Where, SR represents stock returns, which has been calculated by taking natural log of current stock prices divided by previous stock prices.

α represents the intercept form.

HB represents mutual funds herding.

μ shows the error term.

Data Analysis Techniques

The pooled variance technique has been used to measure the herding behavior. Descriptive statistics and regression model have been used for the analysis of mutual funds herding and stock returns.

4. RESULTS AND DISCUSSION

This paper explores the impact of herding behavior of the investors, who invests in mutual funds, on stock returns. Herding Behavior has been calculated by using the pooled variance technique for the sample of companies. Descriptive statistics and regression model have been used to explain the relationship between mutual funds herding and stock returns.

Table 1. Herding Behavior

Months	MUTUAL FUNDS COMPANIES														HMT (Herding Behavior)	
	ASF	DSF	ICMF	GASSF	IMF	PSF	PGF	PIF	SMF	TMF	AMF	AFF	FDMF	PPF	$\sum(\beta-1)^2$	$\sum(\beta-1)^2/N$
Jul-08	0.99	0.97	0.61	0.39	0.78	1.24	0.19	0.22	0.83	0.62	0.99	0.13	0.24	0.72	8.92	0.69
Aug-08	1.02	0.92	0.55	0.26	0.79	1.31	0.19	0.29	0.84	0.60	0.70	0.08	0.18	0.56	8.29	0.64
Sep-08	1.00	0.93	0.55	0.25	0.83	1.26	0.18	0.31	0.84	0.66	0.70	0.20	0.21	0.58	8.50	0.65
Oct-08	0.98	0.95	0.57	0.27	0.80	1.58	0.20	0.33	0.84	0.64	0.63	0.22	0.19	0.61	8.78	0.68
Nov-08	0.98	0.78	0.58	0.27	0.75	1.87	0.21	0.32	0.88	0.63	0.63	0.24	0.16	0.60	8.91	0.69
Dec-08	1.00	0.76	0.29	0.02	0.45	2.03	0.02	0.07	0.87	0.43	0.21	0.22	0.00	0.24	6.63	0.51
Jan-09	0.95	0.77	0.82	0.04	0.43	2.59	0.22	0.18	0.73	0.69	0.22	0.71	0.03	0.27	8.66	0.67
Feb-09	0.95	1.04	0.87	0.11	0.50	2.54	0.21	0.17	0.75	0.69	0.25	0.79	0.18	0.26	9.31	0.72
Mar-09	1.30	1.19	0.93	0.10	0.63	2.43	0.21	0.14	1.06	0.83	0.23	0.89	0.33	0.23	10.49	0.81
Apr-09	1.63	1.03	0.91	0.21	0.64	2.41	0.32	0.32	1.14	0.76	0.33	0.86	0.35	0.29	11.22	0.86
May-09	1.61	1.03	0.93	0.25	0.65	2.67	0.34	0.34	1.14	0.76	0.35	0.87	0.34	0.32	11.60	0.89
Jun-09	1.55	1.03	0.95	0.25	0.72	2.69	0.35	0.35	1.52	0.88	0.37	0.88	0.35	0.32	12.22	0.94
Jul-09	1.61	1.03	0.94	0.23	0.76	2.69	0.36	0.34	1.50	0.96	0.35	0.86	0.30	0.30	12.22	0.94
Aug-09	1.70	1.04	0.96	0.23	0.83	2.58	0.35	0.34	1.43	0.99	0.30	0.84	0.25	0.29	12.14	0.93
Sep-09	1.27	1.04	0.93	0.26	0.83	2.72	0.33	0.32	1.17	1.00	0.12	0.82	0.25	0.25	11.30	0.87
Oct-09	1.35	1.04	0.95	0.31	0.83	2.79	0.37	0.35	1.17	1.01	0.16	0.83	0.27	0.27	11.70	0.90
Nov-09	1.27	1.05	0.95	0.32	0.84	2.77	0.37	0.36	1.16	1.01	0.16	0.83	0.37	0.27	11.72	0.90
Dec-09	1.26	1.05	0.95	0.31	0.83	2.76	0.37	0.36	1.14	1.02	0.17	0.83	0.36	0.27	11.68	0.90
Jan-10	1.17	1.05	0.94	0.31	0.81	1.22	0.37	0.36	1.13	1.03	0.18	0.83	0.36	0.27	10.03	0.77
Feb-10	1.14	1.06	0.95	0.32	0.83	1.19	0.38	0.36	1.13	1.03	0.19	0.84	0.38	0.28	10.06	0.77
Mar-10	1.16	1.06	0.95	0.31	0.82	1.10	0.38	0.36	1.13	1.03	0.22	0.85	0.39	0.28	10.04	0.77
Apr-10	1.15	1.05	0.95	0.32	0.82	1.06	0.38	0.36	1.13	1.04	0.22	0.85	0.38	0.28	9.97	0.77
May-10	1.17	1.05	0.92	0.33	0.87	1.11	0.39	0.36	1.13	1.03	0.24	0.86	0.34	0.29	10.10	0.78
Jun-10	1.17	1.05	0.93	0.35	0.87	1.11	0.41	0.38	1.14	1.03	0.25	0.86	0.34	0.30	10.19	0.78

The above table explains the results of pooled variance technique showing the trend of herding behavior of the investors who invest in mutual funds companies in Karachi Stock Exchange (KSE), Pakistan and also explains the trend of returns with respect to time period.

Descriptive statistics are included mean, median, standard deviation, minimum, maximum, sum and count. The following table explains the result of descriptive statistics.

Table 2. Pooled Variance Technique

Description	Stock Returns	Mutual Funds Herding
Mean	-0.05	0.78
Median	-0.00	0.78
Standard Deviation	0.26	0.11
Minimum	-1.61	0.51
Maximum	2.01	0.94
Sum	-15.34	263.50
Count	336	336

The results of descriptive statistics show that the average of stock returns over the five years period is -5%, while the average of mutual funds herding is 78% for the same period. The mid of stock returns and mutual funds herding over the time period are 0% and 78% respectively. The values of stock returns and mutual funds herding are deviated from the average value with 26% and 11% respectively. The minimum value of stock returns is -1.61 and the maximum value 2.01, whereas, the minimum value of mutual funds herding is 0.51 and the maximum value 0.94. The sum of the values of stock returns and mutual funds herding are -15.34 and 263.50 respectively. The number of 336 observations has been considered in the study.

Table 3. Regression Analysis

Regression Statistics Values	
Multiple R	0.19
R Square	0.04
Adjusted R Square	0.03
Standard Error	0.26
Observations	336

Table 4. Test Statistics

Description	Coefficients	S.E	t Stat	P-value
Intercept	-0.39	0.10	-3.93	0.00
Mutual Funds Herding	0.44	0.12	3.50	0.00***

*** represents the significance level at 99%

By putting the values in equation (14)

$$S.R = \alpha + \beta_1 HB + \mu$$

$$S.R = -0.39 + 0.44 HB + \mu$$

The results of regression model show that the value of R-square was 4%, which indicates that regression model has the power with 26% of standard error to explain the impact of mutual funds herding on stock returns. It means that mutual funds herding 4% explain to the stock returns. The co-efficient of mutual funds herding is 0.44, which shows the positive relationship with perceived stock returns. The p value of mutual funds herding is 0.00. The test statistics shows that mutual funds herding has a significant impact on stock returns with positive direction at 99% level of significance. It means that when investors deal with the herding behavior during trading of mutual funds in the market, the returns on stock increases. The market artificially goes up. The investors get the benefits in short run, while lose their positions in the long run, which ultimate affects the whole market.

Table 5. ANOVA

Description	Df	SS	MS	F	Significance F
Regression	1.00	0.80	0.80	12.24	0.00 ***
Residual	334.00	21.78	0.07		
Total	335.00	22.58			

*** represents the significance level at 99%

The ANOVA results show that the overall model of the study is fit and significant with p value 0.00. The results give clear indication that herding behavior has a significant impact on stock returns.

Based on these results, our null hypothesis H_0 has been rejected that mutual herding behavior has not significant impact on the stock returns, while our alternative hypothesis H_1 has been accepted that mutual funds herding has significant impact on stock returns.

5. CONCLUSION

The core objective of the study was to find out the impact of mutual funds herding on stock returns. In this study, the model of Amirat and Bouri^[1] was used to measure the herding behavior in trading of mutual funds stock. Stock returns was used as dependent variable, while mutual funds herding behavior as independent variable. The sample of the study was selected on convenient bases. The population of the study was comprised of all mutual funds listed in stock exchanges of Pakistan including Islamabad Stock Exchange (ISE), Lahore Stock Exchange (LSE) and Karachi Stock Exchange (KSE), whereas, the sample of the study is consisted of 14 mutual funds companies listed in Karachi Stock Exchange (KSE). The five years data of mutual funds on monthly bases from 2006 to 2010 was used in the study. The data was collected from Business Recorder Newspaper, Karachi Stock Exchange (KSE) and Mutual Funds Association of Pakistan. The results of the study showed that there is positive and significant relationship between mutual funds herding and stock returns. It means that when investors are affected with herding behavior, they invest in same securities in which others get returns. The investors get returns in short run and loose the position in long run. Market shows artificial boom and upward trend. Investor ultimately faces lose position. According to these results, null hypothesis of the study was rejected and alternative accepted, which showed that herding behavior has significant impact on stock returns. For the future research, it is recommended to study the other behavioral biases, which affect the stock returns.

Dedication

"I dedicate to this work to my parents, siblings and uncle."

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REFERENCES

1. Amirat, A., & Bouri, A, 2009. A New Measure of Herding Behavior: Derivation and Implications. *World Academy Of Science, Engineering And Technology*, 30:1183-1197.
2. Banerjee, A,1992. A Simple Model of Herd Behavior. *Quarterly Journal of Economics*,107: 797–817.
3. Bikhchandani, S., Hirshleifer, D., & Welch, I, 1992. A Theory of Fads, Fashion, Custom, and Cultural Change as Informational Cascades. *Journal of Political Economy*, 100: 992–1026.
4. Borensztein, E., & Gelos, G, 2003. A Panic-Prone Pack? The Behavior of Emerging Market Mutual Funds. *Int Monetary Funds*, 50(1): 43-63.
5. Chang, E., Cheng, J., Khorana, A, 2000. Examination of Herd Behavior in Equity Markets: An International Perspective. *Journal of Banking and Finance*, 24 (10): 1651–1679.
6. Chen, Y.-F., Yang, S.-Y., & Lin, F.-L, 2012. Foreign Institutional Industrial Herding in Taiwan Stock Market. *Managerial Finance*, 38(3): 325-340.
7. Chiang A, T. C., Li B, J., & Tan, L, 2010. Empirical Investigation of Herding Behavior in Chinese Stock Markets: Evidence from Quantile Regression Analysis. *Global Finance Journal*, 21: 111–124.
8. Christie Wg, Huang Rd, 1995. Following The Pied Piper: Do Individual Returns Herd Around The Market? *Financ. Anal. J.*, July-August: 31-37.
9. DOM, Serpil. 2003. *The Psychology of Investing*. Istanbul: Degisim Publications. 1st Edition, Istanbul.
10. Fama, E, 1970. Efficient Capital Market: A Review of Theory and Empirical Work. *The Journal of Finance*, 25: 383–417.
11. Froot, K.A., Scharfstein, D.S., & Stein, J. C, 1992. Herd on the Street: Informational Inefficiencies in a Model With Short-Term Speculation. *Journal of Finance*, 67: 1461–84.
12. Ghalandari, K., & Ghahremanpour, J. 2013. The Effect of Market Variables and Herding Effect on Investment Decision as Factor Influencing Investment Performance in Iran. *Journal of Basic and Applied Scientific Research*, 3(3): 313-318.
13. Gleasona, K. C., Mathurb, I., & Peterson, M. A, 2004. Analysis of Intraday Herding Behavior Among the Sector Etf's. *Journal of Empirical Finance*, 11: 681–694.
14. Hsiehy, M.-F., Yangz, T.-Y., Yangx, Y.-T., & Lee, J.-S, 2011. Evidence of Herding and Positive Feedback Trading for Mutual Funds in Emerging Asian Countries. *Quantitative Finance*, 11(3): 423–435.
15. Hung A, W., Lu B, C.-C., & F. Lee, C, 2010. Mutual Funds Herding Its Impact on Stock Returns: Evidence from the Taiwan Stock Market. *Pacific-Basin Finance Journal*, 18(5): 477–493.
16. Jayadev, M, 1996. Mutual Funds Performance: An Analysis of Monthly Returns. *Finance India*, 10(1): 73–84.
17. Kapusuzoglu, A, 2011. Herding in the Istanbul Stock Exchange (ISE): A Case of Behavioral Finance. *African Journal of Business Management*, 5(27): 11210-11218.
18. Lakonishok, J., Shleifer, A., & Vishny, R. W, 1992. The Impact of Institutional Trading on Stock Prices. *Journal of Financial Economics*, 32: 23–43.
19. Lao, P., & Singh, H, 2011. Herding Behaviour in the Chinese and Indian Stock Markets. *Journal of Asian Economics*, 22: 495–506.
20. Long, J. D., Shleifer, A., H. Summers, L., & J. Waldmann, R, 1990. Noise Trader Risk in Financial Markets. *The Journal of Political Economy*, 98(4): 703-738.
21. Nofsinger, J., Sias, R.W, 1999. Herding and Feedback Trading by Institutional and Individual Investors. *Journal of Finance*, 54: 2263–2295.
22. Oha, N. Y., & Parwada, J. T, 2007. Relations Between Mutual Funds Flows and Stock Market Returns in Korea. *Int. Fin. Markets, Inst. and Money*, 17: 140-151.
23. Owen S, 2002. *Behavioural Finance and the Decision to Invest in High Tech Stock*. University of Technology, School of Finance and Economics. Working Paper Series, 119: 1-23.
24. Patro, A., & Kanagaraj, A, 2012. Exploring The Herding Behaviour in Indian Mutual Funds Industry. *Asian Journal of Finance & Accounting*, 4(1): 189-204.
25. Puckett, A., & Yan, X, 2008. Short-Term Institutional Herding and Its Impact on Stock Prices. Working Paper, 1-40.
26. Rouwenhorst, K, 2004. *The Origins of Mutual Funds*. Yale Icf Working Paper, 4-48.
27. Scharfstein, D. S., & Stein, J. C, 1990. Herd Behaviour and Investment. *The American Economic Review*,80: 465–479.
28. Shah, S. A., & Hijazi, S. T, 2005. Performance Evaluation of Mutual Funds in Pakistan. *The Pakistan Development Review*, 44(4): 863–876.
29. Sheikh, M., Nazir, N., & Iqbal, W, 2012. Myth of Abnormal Returns: Evidence From Uk's Mutual Funds. *American Journal of Scientific Research*, 67: 59-75.
30. Shiller, R. J, 1984. Stock Prices and Social Dynamics. *Brookings Papers on Economic Activity*, 2: 457-510.

31. Shleifer, A., & Summers, L., 1990. The Noise Trader Approach to Finance. *Journal of Economic Perspectives*, 4(2): 19-33.
32. Shyu, J., & Sun, H.-M, 2010. Do Institutional Investors Herd in Emerging Markets? Evidence from the Taiwan Stock Market. *Asian Journal of Finance & Accounting*, 2(2): 1-19.
33. Sias, R, 2004. Institutional Herding. *Review of Financial Studies*.17: 165–206.
34. Uchida, H., & Nakagawa, R, 2007. Herd Behavior in the Japanese Loan Market: Evidence from Bank Panel Data. *Journal of Financial Intermediation*, 16(3): 555-583.
35. Walter, A., & Weber, F. M, 2006. Herding in The German Mutual Funds Industry. *European Financial Management*, 12(3): 375–406.
36. Warther, V. A, 1995. Aggregate Mutual Funds Flows and Security Returns. *Journal of Financial Economics*, 39: 209-235.
37. Wermers, R, 1999. Mutual Funds Herding and The Impact on Stock Prices. *The Journal of Finance*, 54(2): 581-622.