

INVESTOR'S BEHAVIOR AND DECISION MAKING MODEL IN STOCK MARKET – A LITERATURE SURVEY

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Abstract: This study introduces and reviews the field of behavioural finance. It provides literature review studies that reveal the relevance of these findings for financial markets and its participants. This study also provides a base for research scholars to conduct research in the area of behavioural finance. Behavioral finance investigates the cognitive factors and emotional issues that individuals, financial experts, and traders exhibit within the securities markets. Upon examination, the literature reveals behavioral finance is based on the notion of interdisciplinary research from a wide range of fields.

Keywords: behavioural finance, investor psychology, Investor rationality, Irrational behaviour, Bounded rationality, Heuristic.

JEL Classifications: G02; G11; D03.

1. INTRODUCTION

Traditional finance theory believes on the principle that investors are rational and they process all the available information and take rational decisions. However many researches and studies have proven that investors depict a irrational behavior by making systematic errors during decision making process. Behavioral finance is a new field emerged in the last 25 year that studies how finance is affected by psychology. It combines behavioral and cognitive psychology theory with conventional economics and finance to provide explanations for people's behavior in financial settings and their economic decisions. It also deals with understanding and explaining how certain cognitive errors affect the decision making process of investors. Behavioral Finance attempts to explain and increase understanding of the reasoning patterns of market participants, including the emotional processes involved and the degree to which they influence the decision-making process (Ricciardi& Simon, 2002). Behavioral Finance also helps to explain how and why markets might be inefficient. Shefrin [2000] reveals the distinction between cognitive and affective (emotional) factors, "cognitive aspects concern the way people organize their information, while the emotional aspects deal with the way people feel as they register information".

1.1. History

During the 1960s and 1970s, the works and researches from various theorists in finance, cognitive psychology, and behavioral economists gave roots to the origins of behavioral

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finance. Behavioral finance scholars started to blend the research principles of psychology and behavioral economics with specific investment and financial theories (Victor Ricciardi March 2005). During the classical period, microeconomics was closely linked to psychology. Economic psychology emerged in the 20th century in the works of Gabriel Tarde, George Katona and Laszlo Garai. Expected utility and discounted utility models began to gain acceptance, generating testable hypotheses about decision making under uncertainty.

In the 1960s Psychologists such as Ward Edwards, Amos Tversky and Daniel Kahneman began to compare their cognitive models of decision-making under risk and uncertainty to economic models of rational behavior. In 1979, Kahneman and Tversky wrote *Prospect theory: An Analysis of Decision under Risk*, an important paper that used cognitive psychology to explain various divergences of economic decision making from neo-classical theory. Nobelist Herbert A. Simon developed the theory of Bounded Rationality which explained how people irrationally seek satisfaction, instead of maximizing utility, as conventional economics presumed. Maurice Allais produced “Allais Paradox”, a crucial challenge to expected utility.

In October 2002, the Nobel Prize in economics was awarded to Daniel Kahneman and Vernon Smith, for their work in experimental economics and psychology from the area of decision-making (Victor Ricciardi March 2005). The theory has inculcated, Psychological traits such as overconfidence, projection bias, and the effects of limited attention. In recent years, behavioral finance has been emerging as a significant discipline in academia.

1.3. Principles of Behavioral Finance

Behavioral or Psychology behind investment decisions can be classified as different principles of this new emerging field. The different categories, an investor could be classified are as under:

(a) Herd Behavior

Herd behavior describes how individuals in a group can act together and mimic other's decision without planned direction. In case of financial world, investor buying and selling pattern depends on the direction of market trend is a characteristic of herding. Herding behavior is exhibited by investors when there is market risk such as natural calamities, Bullish and bearish market conditions and recessions and booms, during which they follow what the majority of the group acts on rather than being logical.

(b) Confirmation Bias

It is a cognitive bias or tendency to interpret information in such a way that it confirms preconceptions, while avoiding interpretations which contradict previously held beliefs (Shefrin 2007). When searching for information to confirm one's beliefs people tend to follow their original thoughts on a subject and let that form the research. This behavior is referred to as confirmation bias or positive bias (Jones & Sugden).

(c) Hindsight Bias

The recollection of confidence is systematically restored after feedback about previous event has been received, known as hindsight bias (Hertwig, Gigerenzer & Hoffrage, 1997). Fischhoff's original explanation for Hindsight bias was that new information is immediately incorporated with what is already known about the event. "The purpose of this integration is to create a coherent whole out of all relevant knowledge" (Fischhoff, 1977) cited in (Mazursky & Ofir, 1996).

(d) Gambler's Fallacy

Gambler's fallacy is referred to 'Monte-Carlo fallacy' or 'Maturity of Chances fallacy'. Gambler's Fallacy mainly revolves around the illogical concept of any investor who believes that two events that are independent of each other in reality, the occurrence of first event may have effect on the occurrence of the second event even though in reality; the occurrence of first event has no statistical effect on the occurrence of the second event.

(e) Cognitive Reflection Task

Cognitive Reflection Task is simply the interaction between the spontaneous and the logical thinking process. The spontaneous process 'System 1' does not require or consume much attention. It is the answer that first spring to mind when presented with a problem. 'System 2' requires a deliberate effort to use and is slow but logical (Shane, 2005). Shane (2005) explains the CRT process. "Recognizing that the face of the person entering the classroom belongs to your math teacher – it occurs instantly and effortlessly and is unaffected by intellect, alertness, motivation or the difficulty of the math problem being attempted at the time. Conversely, finding the square root out of 19163 to two decimal places without a calculator involves 'System 2'.

(f) Prospect Theory

Prospect theory is based on two major parts, loss aversion and mental accounting. Loss aversion refers to that individuals are more sensitive to losses compared to gains. (Benartzi & Thaler, 1995). Daniel Kahneman and Amos Tversky were the pioneers within prospect theory and they studied how people reacted to a prospect of a loss.

(g) Cognitive Biases

Cognitive psychologists have documented many patterns regarding how people behave. "Mental accounting is the set of cognitive operations used by individuals and households to organize, evaluate, and keep track of financial activities" (Thaler, 1999). Some of the patterns are as follows:

(i) Heuristics: Heuristics, or rules of thumb, make decision-making easier. They are mental shortcuts that simplify the complex method ordinarily required to make judgments. Some of the familiar Heuristics terms are affect, representativeness, anchoring and

adjustment, availability, familiarity, overconfidence, Status quo, loss aversion and regret aversion.

(ii) Anchoring: The concept of anchoring can be explained by the tendency to attach or “anchor” our thoughts to a reference point - even though it may have no logical relevance to the decision at hand. (Phung, 2008). The reference point may refer to a recent data and may also involve random data. For example, some investors tend to believe that stocks which have fallen considerably over a short period now can be bought at a discount and this due to the fact that the investors has created a reference point that is they have anchored a high price for that specific stock irrelevant of the stock’s evident drop.. The stock is therefore believed to bounce back over a certain time period. (Phung, 2008).

(iii) Overconfidence: There is a thin line between being confident and overconfident. Shefrin (2000) illustrates this statement by an example of average people’s overconfidence when it comes to driving. A research group was asked regarding their driving ability. Between 65 and 80 percent of the people who answered the question rated themselves above average. A common trait among investors is a general overconfidence of their own ability when it comes to picking stocks, and to decide when to enter or exit a position. These tendencies were researched by (Odean. T, (2002).Odean found that traders who conducted the most trades tended, on average, to receive significantly lower yields than the market.

(iv) Framing: People’s perceptions of the choices they have are strongly influenced by how these choices are framed. That is, people often make different choices when the question is framed in a different way, even though the objective fact remains constant (Kahnemann.D and A. Tversky, 1979). Framing is the notion, how a concept is presented to individuals matters.

(v) Disposition effect: It relates to the tendency of investors to sell shares whose price has increased, while keeping assets that have dropped in value. The disposition effect refers to the pattern that people avoid realizing paper losses and seek to realize paper gains. Investors are less willing to recognize losses but are more willing to recognize gains.

1.4. Need for this Literature Survey

This particular study was conducted keeping in mind that overall sentiment of investors had subdued due to continuous lack of profit making chances disappearing from the stock market. In fact, this was observed in Indian stock market in recent times. Before finding out the reason behind this situation, it was thought, understanding the theories developed by various researchers in different sets of period would give an insight into the present scenario. This necessitated the current process of literature survey.

1.5. Objectives Behind the Study

Investor psychology in stock market is different if compared to their pattern of behavior in debt market. This difference is captured by the behavioral finance principles. The main objective behind the present study is to trace these varied patterns among the investors through the periods. The second objective is to bring out the important and most observed

pattern of behavior among the investors of different countries.

1.6. Limitations

The study was constructed only on the available research papers which were published in various journals. Not all the important aspects are covered in this survey. Hence, the findings may not be enough to explain the objective of this study. Also, this cannot be generalized for all the patterns found among the investors.

2. METHODOLOGY

The study is descriptive in design as it tries to bring out the various theories and major findings from articles authored by experts in this particular behavioral finance field. The analysis can be termed as the first step of Meta Analysis. For Meta analysis, the needed data is the survey of literature available on a specified topic or issue, hence this forms the secondary source of data. Behavioral finance is the central research issue for the present study. A sample of twenty three research articles had been collected for this study. EBSCO database had been used to collect the required information.

3. SURVEY ANALYSIS AND FINDINGS

Kahnemann and Tversky (1979), establish their theory (Prospect Theory) based on understanding that investors are averse to loss and not to risk. Demonstration of several phenomena which violated the tenets of expected utility theory was conducted. The demonstrations were based on the responses of students and university faculty to hypothetical choice problems. The theory was developed for simple prospects with monetary outcomes and stated probabilities, but it can be extended to more involved choices. Prospect theory distinguishes two phases in the choice process: an early phase of editing and a subsequent phase of evaluation.

The function of the editing phase is to organize and reformulate the options so as to simplify subsequent evaluation and choice. Editing consists of the application of several operations that transform the outcomes and probabilities associated with the offered prospects. The major operations of the editing phase are Coding, Combination and, Cancellation. The editing phase consists of a preliminary analysis of the offered prospects, which often yields a simpler representation of these prospects.

In the second phase, the edited prospects are evaluated and the prospect of highest value is chosen. It was found out that, people underweight outcomes that are merely probable in comparison with outcomes that are obtained with certainty. This tendency, called the certainty effect, contributes to risk aversion in choices involving sure gains and to risk seeking in choices involving sure losses. People generally discard components that are shared by all prospects under consideration. This tendency, called the isolation effect, leads to inconsistent preferences when the same choice is presented in different forms. An alternative theory of choice is developed, in which value is assigned to gains and losses rather than to final assets and in which probabilities are replaced by decision weights.

The value function is normally concave for gains, commonly convex for losses, and is generally steeper for losses than for gains. Behavioral biases play a major role in investors' behavior and their decision-making process. A well-documented pattern suggests that many investors attribute good outcomes (i.e., gains) to skill while attributing bad outcomes (i.e., losses) to bad luck. Thus, they are often overconfident, over-estimating their chances of correctly predicting the direction of price changes. Investors are also affected by what is known as the "representativeness heuristic", or an overreliance on familiar clues, such as past performance. Most investors exhibit "availability bias", or a strong tendency toward investing in what they know, such as companies based in their home countries.

Study done by **De Bondt and Thaler (1985)** was in overreaction hypothesis. They argue that there is significant evidence of overreaction by individuals rather by institutions. They emphasized that people tend to pay more attention on recent results rather than past information, this mental shortcut was known as representative heuristics, and this motivated overreaction hypothesis. This hypothesis can be explained as investor's excessive optimism created by good or even exciting news that might probably get reversed in future. Monthly return data for New York Stock Exchange (NYSE) common stocks, as compiled by the Center for Research in Security Prices (CRSP) of the University of Chicago, were used for the period between January 1926 and December 1982. An equally weighted arithmetic average rate of return on all CRSP listed securities serves as the market index. The empirical analysis was based on three type of return residuals: market-adjusted excess returns; market model residuals; and excess returns that are measured relative to the Sharpe-Lintner version of the CAPM. Two hypotheses are suggested: (1) Extreme movements in stock prices will be followed by subsequent price movements in the opposite direction. (2) The more extreme the initial price movement, the greater will be the subsequent adjustment.

The empirical testing procedures are a variant on a design originally proposed by Beaver and Landsman in a different context. The tests in this study assess the extent to which systematic nonzero residual return behavior in the period after portfolio formation ($t > 0$) is associated with systematic residual returns in the preformation months ($t < 0$). The focus was on stocks that have experienced either extreme capital gains or extreme losses over periods up to five years. They found out that stock that experienced extremely good performance over the past 3-5 years tend to be outperformed by prior losers over those subsequent 3-5 years. They justify these results by arguing that the investors believe that great performance in the past is a proxy for great performance in the future. Using this argument investors bid up their prices of past winners without even thinking that a firm cannot grow forever. The overreaction effect is asymmetric; it is much larger for losers than for winners.

In another research paper, **Cheng and Khorana (2000)**, investigated the investment behaviour of market participants within different international markets, specifically with regard to their tendency to mimic the actions of others, i.e., engage in herd behaviour. In this paper, they extended the work of Christie and Huang (1995) along three dimensions.

First a new and more powerful approach to detect herding based on equity return behaviour was proposed. Using a non-linear regression specification, the relation between the level of equity return dispersions (as measured by the cross-sectional absolute deviation of returns, i.e., CSAD), and the overall market return was examined. In the presence of severe (moderate) herding, it was expected that return dispersions will decrease (or increase at a decreasing rate) with an increase in the market return.

Second, the presence of herding across both developed and developing financial markets including the US, Hong Kong, Japan, South Korea, and Taiwan was examined.

Third, shifts in herding behaviour subsequent to the liberalization of Asian financial markets were also tested.

Daily stock price data for the entire population of US firms and the equally-weighted market index along with year-end market capitalizations for each firm from the Center for Research in Securities Prices (CRSP) at the University of Chicago was used. Daily stock price data for all NYSE and AMEX firms was used over the January 1963±December 1997 period. The daily price and returns series along with the year-end market capitalization for each firm and the equally-weighted index return for Hong Kong (January 1981±December 1995), Japan (January 1976±December 1995), South Korea (January 1978±December 1995), and Taiwan (January 1976±December 1995) was obtained from the Pacific-Basin Capital Markets Research Center (PACAP) tapes of the University of Rhode Island.

The findings of the study were: During periods of extreme price movements, equity return dispersions for the US, Hong Kong and Japan actually tend to increase rather than decrease, hence providing evidence against the presence of any herd behaviour. For South Korea and Taiwan, it was found that there was a significant non-linear relation between equity return dispersions and the underlying market price movement, i.e., the equity return dispersions either increase at a decreasing rate or decrease with an increase in the absolute value of the market return. Macroeconomic information tend to play a significantly greater role in the decision making process of market participants in case of South Korea and Taiwan. For South Korea and Taiwan the presence of smaller equity return dispersions (and hence herding) during both extreme up and down price movement days was documented.

Barber and Odean (2001) believes that there was a simple and powerful explanation for high levels of trading on financial markets, "Overconfidence". Human beings are overconfident about their abilities, their knowledge and their future prospects. Odean (1998) showed that overconfident investors – who believe that the precision of their knowledge about the value of a security is greater than it actually is – trade more than rational investors and that doing so lowers their expected utilities. Greater overconfidence leads to greater trading and to lower expected utility.

Psychologists observed that, in the area such as finance men are more overconfident than women. This difference in overconfidence yields two hypotheses:

H1-Men will trade more than women

H2-The performance of men will be hurt more by excessive trading than the performance of women.

The primary contribution of this paper was to study and test whether more overconfidence leads to more trading and to lower returns. The primary data set is information from a large discount brokerage firm on the investments of 78000 households for the six years ending in December 1996. For this period end-of- month position statements and trades that reasonably estimate monthly returns from February 1991 through January 1997 were also available. Sampled households were required to have open account with the discount brokerage firm during 1991. During the sample period men's account held common stocks for 58 months on an average and women's for 59 months. The median number of months men held common stocks is 70 and women it is 71. Since the focus of study is only on the common stock investments of households, Mutual funds, ADR's warrants and options were excluded. The secondary data set is demographic information compiled by Infobase Inc. and provided by the brokerage house. These data identify the gender of the person who opened a household's first account for 37,664 households, of which 29659 (79%) had account opened by men and 8005(21%) had accounts opened by women.

The methodology adopted for the study were, (a) **Return Calculations**, to evaluate the investment performance of men and women the gross and net return performance of each household is calculated. (b) **Turnover**, the monthly portfolio turnover for each household is calculated as one-half the monthly sales turnover plus one-half the monthly purchase turnover. (c) **Effect of trading on Return Performance**, own benchmark abnormal return for individual investors that is similar in spirit to those proposed by Lakonishok, Shleifer and Vishny (1992), and Grinblatt and Titman (1993) was calculated. (d) **Security Selection**, to measure security selection ability, the returns of stocks bought with those of stocks sold were compared.

It was found out that, Women hold slightly but not dramatically smaller common stock portfolios than men, men lower their returns more through excessive trading than women and not because their security selections are worse. Married women tend to hold smaller common stock portfolios than married men and these differences are smaller between single women and single men. Differences in turnover are larger between single women and single men than between married women and men. Some men and to a lesser extent women trade for entertainment. Women tend to hold less risky positions than men within their common stock portfolios.

Caparrelli, et al., (2004), studied the existence of herding Behavior in Italian Stock market. Using the data, they test the presence of herding as described in Christie & Huang (1995) Chang, Cheng and Khorana (2001) and Hwang and Salmon(2001). The authors, argued that during periods of market stress, investors use market consensus beliefs as their own beliefs. The herding presence was tested on days of stock market stress, using a regression model. They also tested the model proposed by Hwang and salmon (2001) which was based on the analysis of Beta dispersion in the Italian stock market.

The test was applied to the global sample and to the large and small cap samples for the time period Jan 1989 to Jan 2001. The data sample consisted of more than 13 years of data from September 1st 1988 to January 8th 2001. The sample included newly issued stocks quoted during the research period and also large and small cap stocks. The sample had a total of 151 stocks consisting of 68 large cap and 83 small cap.

The test for Italian stock market supports Christie and Huang (1995) that herding existed in extreme market conditions, both in terms of sustained growth rate and high stock levels.

Dissertation submitted by **Lin Tan (2005)**, focused on several issues related to Chinese stock market and they were categorized into three essays which is described as follows:

Essay-1: "Correlation analysis of Chinese Stock Market Dynamics"

In the first essay, he examined A-share (A shares are restricted shares sold only to Chinese investors and are denominated in local currency RMB Yuan) and B-shares (They are unrestricted shares denominated in U.S Dollars and were sold only to foreign investors before February 11, 2001 and have been sold both to foreign and domestic investors after that date) market segmentation conditions by employing a dynamic multivariate GARCH model to analyze daily stock return data for the period 1996 through 2003 and to estimate Dynamic Conditional Correlations (DCC) for A-shares and B-shares.

Statistics show returns for both a-shares and B-shares are significantly and positively correlated with the change in trading volume or abnormal volume. Correlation coefficients between A-shares and B-share stock returns are time varying. The dynamic relationship between A shares and B shares is not independent of external shocks such as the Asian crisis. Moreover these shocks affect both the level and conditional variance of the correlation coefficient

Essay-2: "Is there Herding Behaviour in Chinese Stock Markets"

In the second essay, he examines whether herding behavior exists in Chinese A and B share markets. Here, he argues that market conditions of return volatility and trading volume are crucial to describing the relation between herding and market conditions.

The data has been collected from all individual stock information listed on the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE) from 1995-2003. There are 746 Shanghai A-share firms (SHA), 54 Shanghai B-share Firms (SHB), 489 Shenzhen A-Share Firms (SZA) and 57 Shenzhen B-Share Firms (SZB). There are 44 firms that dual list A and B shares on SHSE and 43 firms that dual list A and B shares on SZSE. A Shanghai Composite Index for the Shanghai market and a Shenzhen Composite Index for the Shenzhen market has also been collected.

The model used in this paper is a modified version of CCK's model (Chang, Cheng and Khorana). CCK argues that "*market participants suppress their own predictions about asset prices during periods of large market movement, especially in the presence of severe (moderate) herding*". They expect that return dispersions will decrease (or increase at a decreasing rate) with an increase in the market returns. The CCK Model uses Cross sectional absolute deviation (CSAD) to represent return dispersion.

It was found out that there was herding behavior in Shanghai and Shenzhen A share market. That is, when market goes up herding behavior exists in A markets and when market goes down, no herding behavior exists on the A markets. When trading volume is high, herding behavior exists on markets and no herding behavior exists in a market when trading volume is low. In case of B market there is no existence of herding behavior whether the trading volume is high or low. When volatility is excessively high, herding behavior exists on A markets, and no herding behavior exist in a market when volatility is excessively low. In case of B market there is no existence of herding behavior whether the volatility is excessively high or low.

Essay-3: “Empirical Analysis of the Speed of Adjustment to Information”

This essay studies investor’s behavior characterized by the different degrees of sophistication in the Chinese stock market. In this study the researcher examined the price dynamics and the speed of Price adjustments of A and B shares in reacting to common information. Since Chinese market is reported to be in the stage of Weak form market efficiency (Ma and Barnes 2001, Wang, Burton and Power,2004), it was appropriate to concentrate on examining Chinese stock price changes especially in the context of the relative speed of adjustment between A and B shares.

To search out the factors that influence the speed of adjustment and the speed differentials between A and B share markets, the data has been collected from all individual stock information listed on the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE) from 1995-2003. There are 746 Shanghai A-share firms (SHA) 54 Shanghai B-share Firms (SHB), 489 Shenzhen A-Share Firms (SZA) and 57 Shenzhen B-Share Firms (SZB). There are 44 firms that dual list A and B shares on SHSE and 43 firms that dual list A and B shares on SZSE. A Shanghai Composite Index for the Shanghai market and a Shenzhen Composite Index for the Shenzhen market has also been collected.

The study has been conducted by employing a VAR Model (Vector Auto regression Model) that specifies a dynamic system containing Chinese A and B share returns. By estimating and comparing the lagged length and the cross lagged coefficients, the different speed of adjustment in response to common information between A and B share market can be examined. The findings of the study were that though A and B shares in the Chinese markets have identical corporate and market fundamentals but they have different speeds of adjustment to common information. A-Shares that are available to domestic investors have a faster speed than that of B-shares dominated by foreign investors. This is consistent with the finding that Chinese domestic investors are overconfident and overreact in the stock market.

Mei-Chen Lin (2005), examined whether overconfidence can explain the relationship between performance and behavior of investors. As per the Overconfident Model of Barber and Odean (2000), investors are overconfident and thereby underestimate public information, trade too much and hold more risky stocks. This study focused on aggregate investor behavior to know whether overconfidence is a market wide phenomenon.

The data used for the study consists of all common stocks listed on Taiwan Security Exchange (TWSE) during the period January 1981 to December 2002, with at least one year of observations of data price to the portfolio formation date. Weekly stock returns, turnover ratio, firm size, book to market (BM) ratio and foreign institutional holding ratios are also considered from TWSE.

To test the dynamic relationship between stock returns and trading volume, that is, if an increase in stock return is followed by an increase in trading volume, Granger Causal Test (1969) was performed. Before Granger Causal Test was performed, a unit root test was used to avoid spurious outcomes resulting from non stationary data. The ADF Test (Augmented Dickey-Fuller Test) was employed to test a unit root for weekly index return and weekly index turnover from 1981-2002. Two GARCH family models are used to examine the relationship between trading volume and volatility. The hypothesis used for the study were: **H1**- If investors are overconfident, there is a positive causal relation between lagged stock returns and current volume, **H2**- The excessive trading of overconfident investors results in the observed excessive volatility, **H3**- As investors become overconfident; they underestimate risk and thereby trade more of riskier stocks.

It was found out that overconfident investors will trade more aggressively. Excessive trading of overconfident investors results in the observed excessive market volatility. It was also seen that overconfidence effect exists only following bull markets. After a period of stock gains, overconfident traders tend to tilt their investment towards smaller cap and growth stocks consistent with the hypothesis that as investors become overconfident, they underestimate risk and thereby trade more of riskier stocks.

Nagpal and Bodla (2009), attempted to bring out lifestyle characteristics of the investors and their influence on investment preferences. The study tries to test the hypotheses that lifestyle (psychographic) characteristics do not influence investment behavior of individual investors and that there is a massive shift in the investors' preferences towards mutual fund products, a moderate continuing shift towards shares and debentures and a shift away from traditionally important financial instruments (National Savings Certificate (NSC) and life insurance policies). There is no difference in the importance of various sources of information for investment decisions.

For the purpose of collection of information from individual investors, a well-designed and pre-tested questionnaire was used. The questionnaire included 16 Likert type statements designed to cover the various dimension of lifestyles. These statements were based on Activity, Interest and Opinion (AIO) inventory. Cluster analysis was applied to segment sample investors. The investors were classified into three categories, viz., aggressive, moderate and conservative on the basis of their lifestyles. The analysis is particularly directed towards the understanding of durable features of the investors' attitude. With the aim of collecting primary data, a random sample of as many as 350 respondents was selected from urban areas of Haryana, Chandigarh and Delhi.

The findings of the study were that respondents having investments of above Rs. 500,000 dominate the aggressive investors group and investment size of Rs. 50,000 to Rs. 100,000

dominate moderate investors group. The investment sizes of Rs. 50,000 to Rs. 100,000 and Rs. 100,000 to Rs. 500,000, due to nearness to conservative investor group are assumed to follow this lifestyle. Expected rate of return is dependent on the lifestyle of the investor. Investors preferring high-risk assets dominate the aggressive group. The investors preferring low-risk assets dominate moderate cluster. The conservative group of investors has gone in for a balanced choice of portfolio.

Aggressive investors and conservative investor groups have more preference for long-term instruments, while short term instruments are preferred by moderate investors. Aggressive investors have more informational influence than moderate and conservative groups. , they are more likely to seek expert advice from personal sources such as friends and neighbors. Investors in moderate groups are affected by normative influence, i.e., they use friends and relatives as sources of information for financial avenues. Conservative group is dictated maximum by comparative influence meaning, thereby, that they seek support for their own attitude and behavior by associating themselves with groups, which they agree and dissociate with which they disagree.

Shafran, et al., (2009), examined the behavior of investors when buying and selling stocks. This behavior was tested under different conditions, among them restrictions on asset holdings or different information conditions.

The hypotheses for the study were:

Hypothesis 1: The disposition effect

H0: Subjects are not affected by the disposition effect.

Subjects hold losing and winning assets for the same amount of time. Subjects show the same trend in selling profitable and losing assets, and so, $PLR = PGR$. The probability of buying profitable (losing) assets in recent round is no different from the probability of selling profitable (losing) assets in recent round

Hypothesis 2: The effect of information on market index

H0: When subjects are exposed to information on market return there is no effect of gain and losses relatively to the market on their trading behavior.

Subjects hold losing and winning assets for the same amount of time when market index is the reference point. Subjects show the same trend in selling profitable and losing assets, and so, $PLR = PGR$ when market index is the reference point.

The study was based on Experimental basis. The experiment was divided into three cases. Fifty subjects were divided into three groups, and each subject participated in only one of the three cases and in all cases, subjects had to invest at least 50% of their portfolio value in the assets. The subjects “played” 20 rounds and were given feedback following each allocation round, as well as historical information from all the preceding rounds.

It was found out that under restrictions, that is, when subjects were forced to buy and sell assets their trading behaviour was consistent with momentum effect and not with the

disposition effect and when they had complete information (including market return) they were biased by the relative disposition effect.

Amin et al., (2009), attempted to focus on whether or not the Gambler's fallacy overshadows investor's financial decisions while they make them or their financial decisions are completely separated from the behavioral aspects due to their sound knowledge and understanding of the financial markets and the way they work.

The study has been conducted at Lahore Stock Exchange, Pakistan with a sample size of 40 investors taken from Lahore Stock Exchange who trade at different point of time. In order to determine the relationship between expectations and Gambler's fallacy surveys were conducted using a structured questionnaire of close ended questions.

The hypothesis to be tested was Gambler's Fallacy affects investor's expectations while investing.

It was found from the study that gambler fallacy is one of the factors that have contributed towards the irrational decision making by the investors of LSE. Thus the hypothesis Gambler's Fallacy affects investor's expectations while investing was proven.

Abhijeet Chandra (2009), analyzed the impact of competence of individual investors on their trading behavior in the stock market. In financial markets the study of competence effect is particularly important because of its direct relation with the investor's decision making ability. The study tries to establish a link between investor's competence and the trading frequency. The main focus of the study was on the psychological biases that influenced investor's decisions.

The study covers the period 2007-08. Data from individual investor's were collected from September 2007 till February 2008 through a modified questionnaire including questions related to competence and trading frequency. 250 respondents were selected for the study through random sampling technique. Investors selected for the study were from across the Delhi-NCR zone and have their investments in shares and other investment vehicles both on BSE and NSE. Investors whose investment in stock market was between Rs.300,000 and rs.10,00,000 were included in the study.

The hypotheses developed for the study were the following: H1: *Overconfidence caused by number of factors, affects the feeling of competence of investors and thereby their willingness to act on their judgments*, H2: *Individual investors who perceive themselves as more competent, tend to trade more frequently*.

To measure investor's competence a hypothetical model was proposed which assumed that the investor's competence as a combined function of sex, education, income and age.

The findings of the study were that investors perceiving themselves as more competent tend to trade more frequently than those with low perceived perceptions. Higher the educational qualification, the investors are more competent and they tend to trade more frequently. Investors in their 30' and 40's tend to have higher competence and tend to trade more. As investors grow in age, the investors become less competent and tend to trade less. Individuals with higher income are more overconfident and tend to trade more frequently

than with lower income group. Young investors avoid trading frequently due to lack of high income and savings.

Economoua, et al., (2010), in their paper, they first examined the herd behaviour in extreme market conditions in the Greek, Italian, Portuguese and Spanish stock markets for the period 1998-2008 and secondly, the existence of asymmetric herding behaviour associated with market returns, trading volume, and return volatility were also examined. Finally, the presence of herd behaviour within different international markets during the global financial crisis of 2008, were examined.

The presence of herding as suggested by Cheng, and Khorana (2000) were tested. Chang, Cheng, and Khorana (2000) proposed the first online model frame work for testing herding. Their empirical model is built on the intuition that under CAPM assumptions, rational asset pricing models predict that the equity return dispersions are not only an increasing function of the market return but also that the relation is linear. In the presence of herding, the relation can become non- linearly increasing or even decreasing.

In order to examine herd behaviour daily data on stock prices and trading volume for all firms listed on the Greek, Italian, Portuguese and Spanish stock markets available on the Thomson Data stream on day t were collected. Daily stock percentage log-differenced returns from January 1, 1998, to December 31, 2008 were also used.

It was found that in case of asymmetric market the results showed that herding is present during periods of a rising market in the Italian and the Greek stock markets. However, herding is present during periods of a down market in the Portuguese stock market and there was no evidence of herding in the Spanish stock market. By examining the possible asymmetric effects of herding with respect to trading volume. The results indicate the existence of herding in the Portuguese stock market during periods of high trading volume, in the Italian stock market during periods of low trading volume, in the Greek stock market during both periods and no evidence of herding for the Spanish stock market. By examining the possible asymmetric effects of herding during periods of high and low market volatility there was evidence of herd behaviour only under conditions of high market volatility for the Italian and the Greek stock markets. There was no evidence of herding in the Portuguese stock market and Spanish stock market. Finally, to investigate the presence of herding during the global financial crisis of 2008 it was found that there was evidence of herding during the global financial crisis of 2008 only for the Portuguese stock market, there was no evidence of herd behaviour for the Spanish stock market. There was evidence of anti-herding for the Spanish and the Italian stock markets. Investor behavior seems to have been rational for the Greek stock market during the global financial crisis.

Ayhan Kapusuzoglu (2011), investigated the presence of herding behavior in the market on the basis of 70 stocks traded in ISE national 100-index and the daily returns of the index within the period between 2000-2010. In addition, a perceptual space was constructed in the study in order to determine the similar and different relations between the stocks and the index. The study focuses on a current analysis period and a specific index, which distinguishes it from other studies in the field.

The data set used in the study covers the period between 04.01.2000 and 04.01.2010 and consists of the ISE national 100-index and 70 stocks traded in the index's National 100 index was selected because it is very important and efficient market of Turkey and many investors in the world have been investigating ISE National 100 index. In the study a total of 2479 daily return data calculated on the basis of the closing prices of each stock and the index were analyzed using Regression Method.

The study employs CSAD (Cross sectional absolute Deviation) model first employed by Chang *et al.* (2000). In this model CSAD of returns is a linear and increasing function of the market return in rational pricing model. In the presence of herding, the relationship between CSAD and market returns can be increasing, but at a decreasing rate.

Employing CSAD model for the study two models were built when the index is up and when the index is down and the hypothesis tested in the study was: "If y_2 is significantly negative when dependent variable is CSAD, Herd exists in ISE National 100 equity market; otherwise a significantly positive y_2 indicates no evidence of herding".

Furthermore Regression Analysis was used to test the presence of herding Behavior in the market between CSAD and index returns when the market is up or down as specified in the model. Also Multidimensional Scaling analysis was used and a perceptual space was constructed to reveal the similarities and dissimilarities between the stock returns and index returns. It was found out that through regression analysis that, there existed herding behavior in the ISE National 100 index on both rising and falling days. ISE National 100 index investors do not engage in rational investment behavior and there is no efficient resource distribution and price formation.

Rubbaniy, *et al.*, (2011), explored Dutch Pension fund industry to investigate the feedback trading and herding in the investment behavior of mature institutional investors outside the US. Dutch PFs are important in the International financial markets due to their high volume of assets. The study also investigates investment behavior over several asset classes and not limited to equities only.

The study used high frequency monthly panel with more than one asset class (stocks, bonds, Money market papers and investment and Money market funds). It consists of 16,039 individual stocks, 32,396 fixed income financial instruments like bonds, 1618 Money market papers, and 844 investment and Money market funds that are traded by Dutch PFs during the period April 2003 to January 2009. The portfolio turnover dynamics of the Dutch PFs is studied over the analysis period.

The turnover measure developed by Grinblatt *et al.* (1995) defines the turnover rate for PFs. Sias (2004) momentum measure is used to probe whether past security performance drives the institutional demand for a security and changes in portfolio allocation in the Dutch PFs. This measure is based on the idea that securities with higher past returns are more likely to be bought or sold. To investigate herding behavior of Dutch PFs, Lakonishok *et al.* (1992) (LSV Herding measure) was used. Partition of herding measure into buy herding measure (BLSV) sell herding measure (SLSV) was done to investigate the strength of herding on both sides of trading.

The findings of the study were, the turnover dynamics of Dutch PFs over the analysis period shows a high trading activity in foreign portfolios of Dutch PFs from year 2003 towards the end of year 2005 and increasing trading activity in general over the investigation period. From the study it was found out that Dutch PFs are not passive traders. The results also showed a robust evidence of Herding in the Dutch PFs. It was also observed that there was herding asymmetry in buying and selling of securities by the Dutch PFs. Average herding is found to be higher during the crisis time but is mainly driven by higher sell herding. The likelihood of performance based feedback trading is also observed to be higher during crisis times.

Trinugroho and Sembel (2011), tried to examine the excessive trading hypothesis, i.e., “*investors who have higher overconfidence shown by high miscalibration levels will tend to practice aggressive and excessive trading strategy*”. It is an experimental research which combines both between and within subject design. Participants of this research are undergraduate students of Department of Management, Sebelas Maret University, Indonesia who have covered minimal courses on financial management and have never invested in the capital market.

Hypothesis of the study were, H1: *High overconfidence investors have higher frequency and larger trading volume than low overconfidence investors*, H2: *In the group of investors with high level of overconfidence, there is no difference in trading activity before and after the bad news*, H3: *In the group of investors with low level of overconfidence, the trading activity is lower after the bad news*, and H4: *Investors with high level of overconfidence have lower profits compared to investors with low level of overconfidence*.

The results of testing H1 indicate that there are differences in trade activity between high overconfidence group and low overconfidence group using trading frequency and trading volume as proxy. These results are consistent with previous findings that high level of overconfidence will lead to high trading frequency (Graham et.al, 2006; Grinblatt and Keloharju, 2009) and cause the volume of transactions becomes larger (Statman et al, 2003; Glaser and Weber, 2003). These results show that in the context of theoretical research in Indonesia, the excessive trading theory is supported. The results of testing H2 and H3 show that in the group of high overconfidence, the existence of bad news does not affect trading activities. On the contrary, among the investors with low level of overconfidence, the bad news will cause a decline in trading activities. The result of testing H4 proves that the investment return of the groups with high overconfidence is significantly lower than the low overconfidence. This research provides empirical evidence that high overconfidence behavior eventually led to lower investment performance.

4. MAJOR FINDINGS

The major findings from the literature survey was that, behavioral biases play a major role in investors' behavior and their decision-making process, investors believe that great performance in the past is a proxy for great performance in the future, during periods of extreme price movements, equity return dispersions in stock markets actually tend to

increase rather than decrease, hence providing evidence against the presence of any herd behavior.

The survey also brought out some interesting evidence like, women hold slightly but not dramatically smaller common stock portfolios than men and men lower their returns more through excessive trading than women and not because their security selections are worse. Married women tend to hold smaller common stock portfolios than married men and these differences are smaller between single women and single men. Differences in turnover are larger between single women and single men than between married women and men. Some men and to a lesser extent women trade for entertainment. Women tend to hold less risky positions than men within their common stock portfolios.

Herding existed in extreme market conditions, both in terms of sustained growth rate and high stock levels. These studies also showed that Chinese domestic investors are overconfident and overreact in the stock market. Overconfident investors will trade more aggressively, as investors become overconfident; they underestimate risk and thereby trade more of riskier stocks. High overconfidence behavior eventually led to lower investment performance. Under restrictions, that is, when subjects were forced to buy and sell assets their trading behavior was consistent with momentum effect and not with the disposition effect and when they had complete information (including market return) they were biased by the relative disposition effect.

Gambler's Fallacy affects investor's expectations while investing, in addition, investors perceiving themselves as more competent tend to trade more frequently than those with low perceived perceptions. This survey also disclosed that higher the educational qualification, the investors are more competent and they tend to trade more frequently. Investors in their 30's and 40's tend to have higher competence and tend to trade more. As investors grow in age, the investors become less competent and tend to trade less. Individuals with higher income are more overconfident and tend to trade more frequently than with lower income group. Young investors avoid trading frequently due to lack of high income and savings.

Average herding was found to be higher during the crisis time but is mainly driven by higher sell herding. The likelihood of performance based feedback trading was also observed to be higher during crisis times.

5. CONCLUSION

The above study revealed some interesting facts that were observed among the investors. Investors were having '*behavioral bias*' and are affected by '*momentum effect*' when forced but had a '*disposition bias*' when they have information about the market movements. They also had an instinct of '*herd behavior*' and exhibited '*overconfidence*' in varied situations. They '*over reacted*' in a situation which does not need any such reflections. The study also observed that women tend to be a '*passive investor*' when compared to men. '*Gambler Fallacy*' was also found amongst the investment community along with their inclination towards '*feedback trading*' during crisis period.

It is pertinent, that 'efficient market hypothesis' theory of stock market is influenced by these behavioral aspects of individual investors. Rise and fall of equity price in the market is determined by the demand and supply, which again is impacted by these behaviors. A well-structured research into this behavioral finance field will reveal much more exiting facts that might provide valuable solution to an investor as well as policy decision makers.

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