Review of Behavioral Finance: Insights into Irrational Minds and Market

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Abstract - In the field of finance, there are many theories like EMH, CAPM, etc which have revolutionized the study of finance. All the above said theories are based on the premise of rationality. The traditional finance theories played a very limiting role in understanding the most important factor that of human behavior in the investment process. This limiting factor paved a way for the many researchers to bridge this gap and that has led to the emergence of behavioral finance. Behavioral finance is an emerging field of study which integrates psychology, sociology and economics to explain the behavior of financial markets and investors. The great works of Kahneman and Tversky have contributed theories like Prospect theory and framing theories which have helped in the development of Behavioral finance. There are many psychologists like Shiller, Statman, Thaler who have tried to explain the investor's behavior that deviates from rationality. In the beginning of 1990's there are growing numbers of research works carried on to understand the behavior of investors and started gaining prominence in the field of finance. In India, behavioral finance is a relatively new discipline which gained importance in the late 2007 after subprime crisis. The main intention of the present study is to synthesizes the existing literature of behavioral finance and identify the research gap. The study revealed that there is less or no research that has been undertaken on few behavioral biases like gamblers fallacy, anchoring, representativeness etc, particularly in India which provides a gap for further research.

Keywords: Behavioral Finance, Behavioral Bias, Psychology

I. INTRODUCTION

"Finance is defined as the study of how scare resources are allocated by humans, and how these resources are managed, acquired and invested over time". The traditional finance theories were framed on the underlying assumption that market agents are rational,[1] because they are assumed to be interpreting correctly the new available information which makes the financial markets efficient. The Efficient Market Hypothesis is one of the very important contributions to the field of finance; introduced by Markowitz in the year 1952 and subsequently developed by the contributions of Fama in 1971. It tries to explain the financial markets and market agents in the finance market. The major drawback of the EMH was not realizing the effect of human behavior in the investment process. However, these traditional finance models revamped the study of finance, many questions were left unanswered such as (i) why do markets underperform or over perform? (ii) Why investors become irrational when they are exposed to risk? (iii) why investors invest in stock market?. The unanswered questions created a research gap.

The experts in the field of finance and economists were finding it difficult to identify the reasons for irrational behavior of market and individuals. At the same time the researchers in psychology started working on identifying the reasons for irrational behavior and found that people behave in odd ways when money is involved. This paved the way for the beginning of Behavioral Finance. Behavioral finance is a new emerging discipline integrating psychology and economics in finance theories which helped the researchers to answer the unanswered questions mentioned earlier. The works of Kahneman and Tversky especially during 1970's played a momentous role in the evolution of behavioral finance theory. MacKay, Edward Meade, George Selden, William Hamilton, Edwin Lefebvre and many such researchers with their publications laid the ground work for the behavioral finance in early 1980. In 1990's the concepts of Behavioral finance started to become visible in the finance journals. Later, many researchers like Shiller, Tversky, Baker, Barberis, Odean, De Bondt, Thaler, Hirshleifer etc. believed that the critical review of psychology and other social sciences shed light on the behavior of stock markets and tried to explain the stock market anomalies. For example, the Dot com bubble (1995-2002) could not be explained by economically rational decisions. Whereas the research in Behavioral

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Finance that was carried out regarding the dot-com bubble implied that soaring prices could be explained by herd behavior. (Shefrin, 2009) pointed out that the main root cause for the Global Financial crisis (2008) was the psychological reactions of the people and not because of fundamentals like increased demand for real estate, fluctuations in net savings rates, and soaring oil prices. According to (Ricciardi & Simon, 2000), "Behavioral Finance is a study that attempts to explain and enhance the understanding of the reasoning patterns of investors, which includes the emotional processes and the extent to which they influence the investment decision-making process." From the above definition it is evident that behavioral finance attempts to explain the finance and investment, from human behavior perspective.

Behavioral finance theories are more focused in understanding the cognitive, social and emotional biases of investors and to analyze how these biases influence the market prices, returns, and allocation of resources. Therefore, Behavioral finance is a contemporary discipline that applies the theories of the psychology to understand the behavior of investors and financial markets.

(Dargham, 2009) opines that traditional finance was challenged by Behavioral finance as it focuses on reaction of the investor to the freely available information to them, which in turn helps to understand the investors' behavior and real market practices. Accordingly Behavioral Finance makes the investors aware about their behavioral biases and helps them to make better investment decisions in complex situations. (Shefrin, 2002) opines that, the practitioners studying Behavioral finance should be able to identify their own mistakes and that of others and try to avoid these mistakes in their future investment decisions.

The complete literature of behavioral finance is broadly classified into two segments: first segment includes the identification of the anomalies in the EMH which is explained using different behavioral models like 'over and under reactions', 'mental compartments', and overconfidence (De BONDT & Thaler, 1985) and second segment includes the understanding of the investors biases that are contrary with the traditional economic theories of rational behavior (Barber & Odean, 1999). According to (Athur, 2014), the individual investors investment decisions are correlated with the behavioral biases like 'Overconfidence'; 'Representativeness'; 'Herding'; 'Anchoring'; 'Cognitive Dissonance'; 'Regret Aversion'; 'Gamblers' Fallacy'; 'Mental Accounting' and 'Hindsight Bias'.

The main aim of the paper is to systematically review the literature relating to behavioral finance, and try to highlight the gaps in the existing studies of behavioral finance. The paper is categorized into two parts, first part includes the review of behavioral finance and behavioral biases and second part reviews the literature of behavioral finance in India.

II. LITERATURE REVIEW ON BEHAVIORAL FINANCE

Behavioral finance is a novel discipline which is becoming apparent these days. It tries to study the illogical behavior of the investors. Many behavioral economist believe that the basic underlying assumption of traditional finance of individuals being rational was very unrealistic. According to (Sewell, 2007), "Behavioral finance is the study of the impact of psychology on the behavior of financial practitioners and the subsequent effect on markets".

The Behavioral finance reviews carried between late 1970s to 2005 revealed that, the study of psychology will form a basis for explaining the irrational behavior, which leads to the fundamental concepts of behavioral finance.

(Kumar & Goyal, 2015) The utility theory (EUT) proposes that if the investor wants to judge the different alternatives available and make a balance decision, his investment behavior is completely based on the risk associated with the alternative and his utility. (Kahneman & Tversky, 1979) analyzed the expected utility theory as a 'descriptive model of decision making under risk', and found that preferences among risky prospects revealed few pervasive effects which were conflicting with the basic utility theory. Hence they developed a new model called prospect theory.

(Tversky & Kahneman, 1985) pioneered the concept of "Framing" and opined that, "the psychological beliefs govern the perception of decision problems, evaluation of probabilities and outcomes; yielding predictable shifts of choices when the same problem is framed in different ways".

(Shiller, 2003) pointed out that, around 1970's EMH theory had become more prevalent in academic circles. Reliability of this theory was eroded by a sequence of discoveries of many anomalies, and of indication of excess volatility of returns in 1980's. To answer these anomalies and excess volatility a new research discipline came into existence i.e. behavioral finance which integrated psychology and sociology in finance theories. There were few important developments in 1990s which includes feedback theories and so on.

(Schiereck, De Bondt, & Weber, 1999) observed that Behavioral Finance tries to create an interface between the individual behavior and market phenomena, and tries to combine the insights from the theories relating to psychology and finance. However, Behavioral Finance tries to identify and analyze the behavioral biases frequently exhibited by investors and also provides various strategies to overcome them.

(Baker & Ricciardi, 2014) in their book explained Behavioral Finance as the new field of investor behavior

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which tries to explain investor's decision by aggregating the concepts of psychology and investment at both a micro level (individuals and groups) and a macro level (financial markets). They opined that Investor Behavior constitutes the cognitive and emotional biases that individuals, finance professionals, stock brokers and agents face during the process of financial planning and investment. In general, individual investors' judgment and decisions are completely based on their past events, personal views, and inclinations.

1. Prospect theory

The prospect theory was developed by renowned psychologist, Daniel Kahneman and Tversky, They illustrated how investors contravene the basic utility theory. They conducted an experiment on the preferences of the investors when the same situations are framed in different way. The subjects of the experiment were asked to choose between two options first one 100% chance of winning 4000 and 80% chance of winning 5000, 80% of the subjects chose the first option (100%, 4000). Whereas expected utility theory envisions that individuals should not choose differently in the above mentioned cases, since the outcome of the above two cases are same. Therefore it is evident that the individuals will prioritize their preferences for certain outcomes (Kahneman & Tversky, 1979). Hence, prospect theory identifies a group of illusions like loss aversion, mental accounting, and regret aversion which may impact the decision process.

2. Loss Aversion

In traditional finance, it is assumed that investors are risk averse; on the contrary behavioral finance theories propose that investors are not risk averse but loss averse. The investors tend to hold a loss making stock and try to sell a winning stock, because they are loss averse. According to (Dargham, 2009), "Loss aversion refers to the notion that investors suffer greater disutility from a wealth loss than the utility from an equivalent wealth gain in absolute terms".

(Grinblatt & Keloharju, 2000) opines that loss aversion tries to explain the momentum of the investors. The authors analyzed the propensity of buying and selling of stock based on past data. They found that, "investors implied to be momentum investors, who buy past winning stocks and sell past losers". The portfolios of such investors seem to more profitable than those of other investors.

(Barberis & Huang, 2001) studied the loss aversion of two economies[2], one, in which investors are loss averse over individual stock fluctuation labelled as "individual stock accounting" and other, in which investors are loss averse over portfolio fluctuations labelled as "portfolio accounting". They found that loss aversion in individual stock fluctuation is more than that of portfolio fluctuations which resulted in high volatility in the stock price.

(Coval & Shumway, 2005) studied the behavior of proprietary traders at 'Chicago Board of Trade' (CBOT) and investigated the effect of behavioral biases on the individual stock prices. The proprietary traders of CBOT exchange are risk takers in the late day in order to cover their losses made in the beginning of the day; hence the CBOT traders appear highly loss-averse. The implications of this bias led to the high volatility in the afternoon prices of the stocks, as the traders bought overpriced contracts.

1.1. Mental Accounting

Behavioral researchers have revealed that investors are prone to have multiple attitudes about risk. For some investments, investors might be conservative and for some others, they might be aggressive in terms of risk taking ability. For example, many people have a certain budget to meet their current expenses and capital expenditure.

According to (Henderson & Peterson, 1992), "Mental accounting is a type of decision framing in which individuals form psychological accounts of the advantages and disadvantages of an event or option".

The traditional finance theories recommend that the risk management should be done at a portfolio level, in contrast behavioral finance theories recommend that risk management should be done at different levels according to the risk tolerance level for different financial goals (Brunel, 2003)

2. The heuristic biases

(Brabazon, 2000) defined the heuristic bias, as "the process by which investors find out solution for complex problems in uncertain environments by trial and error method which in turn leads to the rule of thumb". The different heuristics that influence the decision making of the investors are representativeness, anchoring, overconfidence, gambler's fallacy and availability bias

2.1. Anchoring

"Anchoring bias means the human tendency to rely heavily on one piece of information or anchor during the decision making process". The investors are unlikely to change their investment decision even when a new reliable information is available. (Barberis & Thaler, 2003) argue: "At least two effects appear to be at work. First, people are reluctant to search for evidence that challenges their beliefs. Second, even if they find such evidence, they treat it with excessive skepticism".

2.2. Overconfidence

Overconfidence suggest that investors overestimate their skills in predicting the market, and end up taking high risk in their investment decisions.

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(Barber & Odean, 2000) conducted a survey of 66,465 households and found that those who trade very frequently and excessively accounted for lesser return when compared to those who trade less frequently. The excessive trading exhibits the overconfidence bias resulting in poor performance of investors in stock market. He concluded that excessive trading is hazardous to the wealth. (Barber & Odean, 2001) discussed that men will trade excessively when compared to women as men are overconfident about their investments.

(Daniel, Hirshleifer, & Subrahmanyam, 1998) overconfidence indicates negative long-lag autocorrelations, excess volatility, and mispricing of the stocks.

Pointed out that overconfident irrational investors end up taking high risk and hence they will be earning high returns in the long run

(Bernardo & Welch, 2001) Overconfidence in an economy is favorable as the overconfidence agents take high risk and facilitates the emergence of entrepreneurs.

2.3. Representativeness

(De BONDT & Thaler, 1985) studied the stock returns on the NYSE for a three-year period. They chose the best 35 performing stocks and created a "winner's portfolio" and the worst 35 performing stocks were labelled as "losers portfolio". They found that the latter portfolio consistently beat the market index, while the former portfolio consistently underperformed. They also studied small individual investors' behavior towards trading of stocks and found that decision process influences decision outcomes as most of the investors react to the unexpected and dramatic news event

2.4. Herd behavior

Humans are conditioned to their social environment and often pressurized to follow. A basic observation made on the human behavior is that if there is a regular conversation with one another, they develop similar thinking process (Dargham, 2009). (Hirshleifer & Hong Teoh, 2003) noticed that mutual fund managers develop the frequency of buying the similar stocks which are bought by the other managers in the same city. A key variable for herd behavior is WOM (Word of Mouth). It is obvious that people generally tend to trust their friends, colleagues and relatives than media.

Literature on Behavioral Finance in India.

(Statman, 2008) conducted a detailed research on studying the behavioral biases relating to the cultural aspects of the individual and opined that "the collective set of experiences of people with the same culture influences the cognitive and emotional approach of investment decisions". He also observed that people in low income countries are risk takers, as their aspiration level is very high relative to their current income. Hence propensity to risk, regret and maximization differ depending of their origin and gender.

In India, the concept of Behavioral Finance is relatively a new field; it started gaining importance 2009 onwards. There are very few researches which studied the effect of behavioral bias on Indian investors especially equity investors.

(Jaiswal & Kamil, 2012) investigated the behavior of investors through a structured interview and found that investors are not rational. There is a high degree of influence of behavioral biases on their investment decisions which leads to sub optimal results. They also found that investors are satisfied with their sub optimal results.

(Chandra & Sharma, 2010) examined the behavior of Indian investors and tried to point out the psychological biases which affect the stock market. They identified the 5 common biases namely, overconfidence, over/under opportunism, representativeness, conservatism and sensitivity to the rumors as the biases which have a high degree of influence the Indian investors.

(HS & others, 2009) opined that the Indian financial market saw a great momentum in the area of investment during 1998 to 2008. They studied the financial market and found that there were many individual investors with small savings who entered the stock market without analyzing the hidden risk involved in the stock market investments. The investors relied more on the opinions of others that the basic fundamentals (fundamental and technical analysis) of the market.

(Chaarlas & Lawrence, 2012) conducted a survey of 519 Indian equity investors and found that majority of investors encountered anchoring bias followed by framing bias and loss aversion bias. They also mentioned few suggestions to overcome these biases.

(Nagpal & Bodla, 2009) found that Indian investors prefer less risky investments as they are very conservative about their investments. Majority of the investors use the reference group to make the financial decisions and follow them blindly.

(Prosad, Kapoor, & Sengupta, 2012) studied the herding effect in Indian Stock market (NSE) using linear regression model. They found that Indian markets are efficient and reported that there is no severe herding. If at all herding prevails it is only in the bull phase.

(Kalra Sahi & Pratap Arora, 2012) segmented the Indian individual investors into four categories labeled as *the Novice Learner, the Competent Confirmer, the Cautious Anticipator and the Efficient Planner* based on their common behavioral biases and tried to understand the investor behavior accordingly.

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(Misal, 2013) opines that the irrational behavior of investors could be attributed to two major mistakes of investors which lead into irrationality. Firstly, overconfidence resulting in excessive trading and Secondly, the tendency of holding a losing investment as a result of regret aversion.

III. DISCUSSION AND CONCLUSION

The emergence of the field of behavioral finance has helped in deepening the knowledge of financial markets. The expeditious development in this field is expected to improve the efficiency and predictive power of investors' behavior and the entire financial markets in the future but, since behavioral finance is at its infant stage of development, much more theoretical analysis and empirical testing are needed. The main aim of the study is to synthesis the literature relating to behavioral finance and makes an attempt to understand the behavioral biases which affect the investors' investment decisions and also to address the question as to why investor's behavior deviates from rationality. From the above literature review, it is evident that there is a paradigm shift from EMH to Behavioral finance. Behavioral finance emphasizes more on understanding human psychology of the investors in order to overcome the irrational financial decisions. Understanding human psychology is a broad area to study, but the behavioral economist has rightly focused on studying the behavioral biases, which helps to understand the irrational behavior of investors. In total more than 50 papers were reviewed, out of which only 30 papers contributed to the core literature of behavioral finance. The main findings of the review are that although there has been lot of research on few biases like prospect theory, herd behavior and overconfidence, there is acute paucity of literature relating to few behavioral biases like gamblers fallacy, representativeness, anchoring, etc. Behavioral finance is still in its infancy stage globally and particularly in India there is very minimal research that has been undertaken. Hence, there is room to study the under researched behavioral biases which helps the investors to be aware about all behavioral biases and make sound investment decisions.

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