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Influence of Behavioral Biases on Individual Investor Decision Making

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Abstract **-** Rational decision making for an individual is coupled with a structured or reasonable thought process. Many a times individual investors' behavior deviates far from rationality. Individual investor behavior is influenced by a variety of psychological heuristics and behavioral biases. First, investors make investment decisions based on various heuristics; they assume price as decision-anchor and are overconfident in their judgments. Second, their investment behavior is highly influenced by representativeness and they do lot of mental accounting in the sense of grouping their gains and losses while making decisions. The impact of herding in individuals' investment decision-making is also significant. The purpose of this paper is to systematically review the literature published in past on behavioral biases in investment decision-making. Through this study, we have identified the various behavioral biases influencing the individual investor decision making.

Keywords: Investor, Behavior, Rationality, Psychological, Heuristics, Biases, Decision-Anchor, Representativeness, Mental Accounting, Herding

Introduction

Behavioral finance studies the psychological aspect of financial decision-making and explains the irrationality of investors in investment decision-making. Behavioral finance is a field of study that proposes psychology-based theories which deviates from logical reasons to explain the irrationality of the investors in investment decision making. Usually, the investor's behavior deviates from making rational or logical decisions and leans towards being influenced by various behavioral biases. These biases influence the investor's rationality in investment decision-making.

Decision Making and Behavioral Biases

Decisions making is a process of choosing of alternative from many available alternatives. It is a multistep process involving analysis of various personal technical and situational factors. There are no exceptions in the case of making decisions in the stock markets either. Taking investment decisions is the most crucial challenge faced by investors. Some personal factors such as age, education, income etc. counts in decision making. On the technical side investment decisions can be derived from various models of finance in the Capital Asset Pricing Model (CAPM). Decisions should not be reached without considering situational factors that consider like the market environment and the market psychology etc. Effective decision making in the stock market requires an understanding of human nature in a global perspective on top of financial skills. Thus, cognitive psychology should be given importance in the process of decision making (Chandra 2008). As a result of the bull market from 2004 to 2007 and the subsequent financial crisis there has been a lot of focus on the irrational investor. Behavioral Finance is becoming an integral part of decision-making process because it heavily influences the investor's performance.

Behavioral bias refers to a pattern of variations in judgment that occurs situations which may sometimes lead to perceptual alteration, inaccurate judgment, illogical interpretation, or what is called irrationality. Investors may be inclined toward various types of behavioral biases which lead them to make cognitive errors. People may make predictable non optimal choices when faced with difficult and uncertain decisions because of heuristic simplifications. Behavioral biases, abstractly, are defined in the same way as systematic errors in judgment. Some authors refer to biases as heuristics (rules of thumb), while others call them beliefs, judgments or preferences, still other scholars classify biases along cognitive or emotional lines. There are numerous identified psychological biases in Behavioral finance literature. Each has its implications on financial decision making and behavior.

Individual investment behavior is greatly influenced by several psychological and emotional biases. These emotional factors such as beliefs, preferences and psychological biases can play a major role in individual investor's investment decision making (Baker & Riccardi, 2014). The role of the psychological factors in the investment decision-making process has attracted much attention. It was used to explain the association between human emotions with investment decisions. Many studies have investigated the investment behavior and decision-making styles of retail investors. These studies revealed that most of the time investors over react to market rumors, speculations and economic fluctuations as they were influenced by psychological and emotional biases while making investment related decisions. These psychological and emotional biases caused the investors to deviate from logical and rational thinking. In this regard, it can be deduced that many behavioral biases could influence investors' decision-making process.

An individual investor is one who purchases small amounts of securities for his/her own account. Every individual wants his/her savings to be invested in the most secure investment avenue. At the retail level, investors are unique and are highly heterogeneous in nature. Individual investors thus, suffer from several psychological and emotional biases. These biases play an integral role in their decision-making. Bearing that in mind, this study identifies those psychological biases that could influence retail investor's perception of risk and subsequently, their investment decision making. It is observed that investors' level of risk acceptance depends mostly on their personal characteristics and attitudes to risk.

Behavioral Biases Theoretical Framework

Research in psychology has documented a range of decision-making behaviors known as behavioral biases. These biases can affect all types of decision making but have implications in relation to money and investing. The biases are related to how we process information to reach decisions and the preferences we have in our mind. The biases tend to sit deep within our psyche and may serve us well in certain circumstances. However, in investments they may lead us to unhelpful or even hurtful decisions. As a part of human nature these biases affect all types of investors both professional and private. However, if the biases and their effects are understood we may be able to reduce their influence and learn to work around them. It is found that a variety of documented biases arise circumstances some of which contradict others. Behavioral economists have tried to explain various irrational investor behaviors in financial markets.

Heuristics

Heuristics is a strategy which can be applied to a variety of problems that usually but not always yields a correct solution. People often use heuristics that reduce complex problem solving to more simple judgmental operations (Tversky and Kahneman 1981). Heuristic decision process is the process by which the investors find out things for themselves usually by trial and error method and lead to the development of rules of thumb. It refers to rules of thumb which humans use to make decisions in complex uncertain environment (Brabazon 2000). Heuristics is relevant in modern trading when the number of instrument and the density of information have increased significantly. Using heuristics allows for speeding up the decision making. Traditional financial models assume the exclusion of heuristics and assume all decisions being based on rational statistical tools.

Behavior Biases:

Modern theory of investors decision making suggests that investors do not always act rationally while making an investment decision they deal with several cognitive and psychology errors. These errors are called behavioral biases. Behavioral bias is defined as a pattern of variation in judgment that occurs situations which may sometimes lead to perpetual alteration, inaccurate judgment, illogical interpretation or what is largely called irrationality (Gordon 2011). Investors may be inclined towards various types of behavioral biases which lead them to make cognitive errors. People may make predictable non-optimal choice when faced with difficult and uncertain decisions because of heuristic simplifications. Behavioral biases abstractly are defined in the way as systematic errors in judgments.

1) Overconfidence Bias: Overconfidence bias has been considered as the most basic form by Pompian (2006), Overconfidence according to him can be measurable as unwarranted faith in ones intuitive reasoning, judgment and cognitive abilities. A common trait among investors is a general overconfidence of their own ability when it comes to picking stock and to decide when to enter or exit a position. Barber and Odean (2000) partitioned investors based on gender and based on the previous psychological research found that men are more overconfident than women and overconfident investors trade excessively.

2) Representativeness Bias: Representativeness is an assessment of the degree of correspondence between a sample and a population, an instance and a category, an act and an actor, more generally between an outcome and a model (Gilovich et al (1983). Representativeness is concerned with determining conditional probabilities. Representativeness is said to be usually employed while making judgment under uncertainty when people are asked to judge the probability that A belongs to B (Tvesky and Kahneman 1983). Representativeness is judgment based on evidence stereotypes. The investors recent success; tend to continue in the future also. The tendency of the investors to make decisions based on experiences is known as stereotype.

3) Herding Bias: Herding bias in financial market is identified as tendency of investor's behavior to follow others action. Practitioners usually consider carefully the existence of herding due to the fact investors rely on collective information more than private information which can result in the prize deviation of the securities from fundamental value. Therefore, many good chances for investment at the present can be impacted. Academic researchers also pay their attention to herding. Herding impacts on stock price changes and can influence the attributes of risk and return models and this has impact on the viewpoints of asset prizing theories. Herding can cause some emotional biases including conformity congruity and cognitive conflict. Investor may prefer herding if they believe that herding can help to extract useful and reliable information. In the security market herding investors base their investment decisions on the masses decisions of buying or selling stocks. In contrasts informed and rational investors usually ignore following the slow of masses and this makes the market efficient. Herding causes a state of inefficient market which is usually recognized by speculative bubbles.

4) Anchoring Bias: Anchoring bias comes into play when people must estimate an unknown value or magnitude. Here people start their estimation by guessing some initial values or an anchor ‘. This anchor is then adjusted and refined to arrive at the final estimate. Anchoring bias is a psychological heuristics which can be said to occur when investors give unnecessary importance to statistically random and psychologically determined anchor‘s which lead them to investment decisions that are not essentially rational when required to estimate a good buy price for a share. The concept of Anchoring can thus be explained by the tendency of investors to anchor‘ their thoughts to a logically irrelevant reference point while making on investment decision.

5) Mental Accounting Bias: Mental accounting was coined by Richard Thaler (1999) and defined by him as the ―set of cognitive operations used by individuals and households to organize, evaluate and keep intact of financial activities. Mental accounting is described as the tendency of people to place particular event into different mental account based on superficial attributes (Shiller - 1998) Mental accounting can serve to explain why investors are likely to refrain for a stock (Shefrin and Statman 1985). This results in a tendency for people to separate accounts based on a variety of subjective reasons. Individuals tend to assign different functions to each asset group which has an often irrational and negative effect on their consumption decisions and other behaviors. Mental accounting refers to the codes people use when evaluating an investment decision.

Statement of the Problem and Rationale of the Study

In academic terminology, "Investment behavior" is a study of behavioral finance which focuses on the individual's psychological factors that contribute towards effective decision making. Behavioral biases affect the clarity in thinking process and consequently lead to suboptimal decisions. Temporary successes can make investors overconfident. The fear of being odd man out and then falling leads to herd behavior. The security in of losing a winning spree and the hope of gaining on a losing stock can result in disposition effect. Getting overwhelmed by bullish or bearish trends in markets can lead to excessive optimism or pessimism. All these biases make us irrational and we start making blunders. These blunders are so deep that they can impact the entire economy. Some of the examples are subprime crisis and dot com bubble. In Indian context our stock market has seen turbulent times in the recent past. It has experienced a sharp dip in 2008 from the heights of 2006 followed by a series of ups and downs in the subsequent years. This was the period when markets observed sharp swings in sentiments in a very short span of time. Thus, a research based on investor behavior becomes relevant. The present study is an attempt in this direction.

Individual investors acquire information from friends, family members, print and electronic media, bankers, brokers and financial advisors for investment decision making. Moreover, the number of individual investors seems to be increasing rapidly with the latest development in financial systems. With this increase in number, there is a need to understand investor's psychology in their decision making. An insight into this may provide explanations to various questions like: "How do investors invest?", "What are the behavioral factors that affect the investment decision making?" This study which focuses on investor's psychology biases can help researchers in identifying the appropriate decision determinants that investors rely on while making investment decisions. Identification of factors influencing the retail investor's behavior is important for all the stakeholders of the stock market, as an understanding of what effects investors' behavior and how investors respond to the market movements would affect their future plans and also help their financial advisors to select appropriate asset allocation strategies which can reap maximum returns on investments made. For the investment companies identifying the most influencing factors on their investors' behavior would affect their future policies and strategies. And, for the government, understanding such factors would affect the required changes in legislation and policies required to maintain investors friendly and efficient investment environment.

Research Objectives

- To review the existing literature on behavioral biases and its impact on decision making.
- To identify the causes of these behavioral biases affecting individuals.

Research Methodology

The methodology used for this study was literature survey. The study was completely based on compiling the studies conducted so far on behavioral biases and investor decision making. The researcher collected different studies on behavioral biases from different research papers, libraries, universities, and bookstores. In reviewing the literature, both theoretical and empirical studies were taken into consideration. We used EBSCO, Emerald and other database (Google Scholar) for the literature search and the following keywords: overconfidence in individual investors' decision-making, representativeness in individual investors' decision-making and home bias and herding bias in individual investors'decision-making.

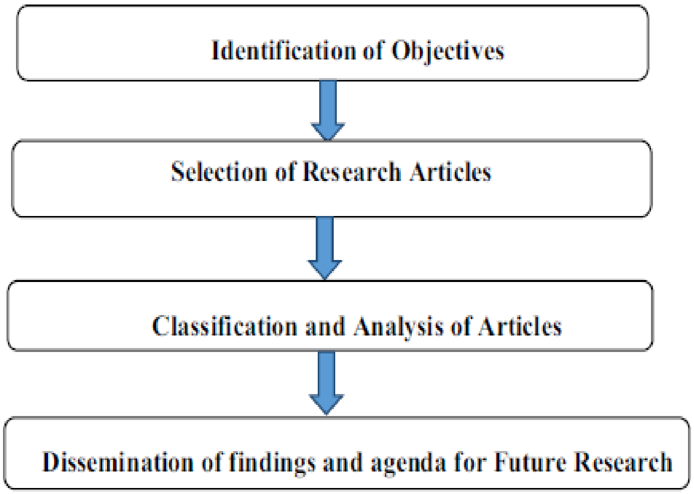

Figure 1. Methodology for the systematic literature review

Findings

Successful stock investing is more than choosing a stock; it is also how to go about doing it. This is achieved through staying rational, choosing a few stocks that are likely to outperform the market, having fortitude to hold on them during short-term market volatility, keeping track of them and controlling excess optimism and pessimism. However, this has not been observed in practice. The field of behavioral finance has developed in response to the increasing number of stock market anomalies (undervaluation or overvaluation) that could not be explained by traditional asset pricing models.

Researchers have pointed out time and again, that investor's irrationality is an inevitable reality. They may lack self-control, be overconfident about their abilities, miscalculate information overreact or follow the crowd without thinking. These errors of investors can get projected in the form of market anomalies like speculative bubbles like the real estate bubble of 2006. These events call for the understanding of investor behavior

Behavioral finance provides explanations for why investors make irrational financial decisions. It demonstrates how emotions and cognitive errors influence investors in the decision-making process. The various causes that led to behavioral finance are anchoring, overconfidence, herd behavior, over and under reaction and loss aversions. Behavioral finance approach investigates the behavioral patterns of investors and tries to understand how these patterns guide investment decision. Behavioral finance offers many useful insights for investment professionals and thus, provides a framework for evaluating active investment strategies for the investors.

Investors do not always act rationally. They deal with several cognitive and psychological errors which are called as behavioral biases. Behavioral biases refer to a pattern of variations in judgment that occurs situations which may lead to perceptual alteration, in accurate judgment illogical interpretation or what is called irrationality. The major behavioral biases covered by the study relate to the following:

- **Over Confidence Bias**: Over confidence of investors are measured as unwarranted faith in one's intuitive reasoning judgments and cognitive abilities. 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.

- **Representativeness Bias**: Representativeness is a judgment based on overreliance stereo types. The investor's recent success tends to continue into the future also the investors to make based on experiences is known as stereo types. While making investments individuals tend to attribute good characteristics of a company directly to good characteristics of its stock.

- **Herding Bias:** Herding bias in financial market is identified as a tendency of investor's behavior to follow other actions. Investors rely on collective information more than private information. In security market herding investors base their investment decisions on the mass decisions of buying or selling stocks.

- **Anchoring Bias:** Anchoring bias is a psychological heuristic which can be said to occur when investors give unnecessary importance to statistically random and psychologically determined anchors' which lead to investment decisions that are not essentially rational.

- **Mental Accounting Bias:** Mental accounting is a set of cognitive operations used by individuals and households to organize evaluate and keep intact of financial activities.

The first ever account derived from empirical studies noting the behavior of individual investor's appeared in the year 1970. Much of the research then was linked to behavioral finance which focused mainly on the various psychological and emotional biases that were likely to affect investor's behavior and decisions. All such biases include heuristics, anchoring, overconfidence, representative bias, home bias, mental accounting, loss aversion, regret aversion and herding.

Research done by Tversky and Kahneman (1974), Daniel et al., (2004), and Barberis et al., (1998) are considered as important theoretical models in identifying the psychological biases that affect investor behavior.

The relationship for all the variables is huge. There is strong relationship between the overconfidence and investment decision of investors which shows that if overconfidence of the investors increases it rises the investor decision making for investment. The connection between Herding and decision making for investment expresses that there is positive relationship between these variables as the Herding bias of the investors increases, it increases the investor decision making for investment. It has been found that majority of the respondents' history influences their present investment decisions hence representativeness bias influences investor decisions.

Major findings showed that results of individual investor decisions were significantly correlated to: representativeness bias, herd Instinct bias, overconfidence, anchoring bias and mental accounting bias.

Conclusion

Researchers have pointed out time and again, that investor's irrationality is an inevitable reality. They may lack self-control, be overconfident about their abilities, miscalculate information overreact or follow the crowd without thinking. These errors of investors can get projected in the form of market anomalies like speculative bubbles like the real estate bubble of 2006. These events call for the understanding of investor behavior. Behavioral finance deals with the influence of psychology on the behavior of financial practitioners and its subsequent impact on the stock market. In recent times researchers have recognized the presence of behavioral biases that offer a more realistic insight into the functioning of stock markets and its participants.

Behavioral biases refer to a pattern of variations in judgment that occurs in particular situations which may lead to perceptual alteration, in accurate judgment illogical interpretation or what is called irrationality. There are numerous identified psychological biases in behavioral finance literature. Each has its implication on financial decision making and behavior.

Behavioral finance studies the effects of social, cognitive and emotional factors on the economic decisions of individuals and institutions and the consequences for market prices returns and the resource allocation. Behavioral models typically integrate insights from psychology with neoclassical economic theory. The difference between behavioral finance and traditional finance relate to the acceptance of behavioral theories by the advocates of the farmer and non-acceptance of behavioral theories by the advocates of the latter. Traditional finance incorporates no element of human psychology which behavioral finance usually incorporates almost no elements of relying on economic theory.

Investors should make constant attempts to increase their awareness on behavioral finance by educating themselves on the field. Investors should study about the biases and reflect on their decisions. This would help them in achieving better self-understanding of the extent and the manner to which they get influenced by emotions while making financial decisions under uncertainty. 2. After achieving satisfactory awareness they should maintain a chart of the behavioral biases they are likely to be vulnerable to. They should review this periodically in order to recollect and refresh their memory thus giving themselves a better chance to make improved decisions in the stock market. Awareness about behavioral biases and its application in the course of making investment decisions would be 220 increasing the rationality of investment decisions thus making a way for higher market efficiency

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