

## **BEHAVIORAL FINANCE: AN INTRODUCTION TO THE PRINCIPLES GOVERNING INVESTOR BEHAVIOR IN STOCK MARKETS**

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### **ABSTRACT**

The conventional academic finance emphasizes theories such as modern portfolio theory and the efficient market hypothesis, but the novel field of behavioral finance integrates psychology and sociology in financial decision-making process of individuals, groups, and institutions. This paper is aimed to discuss some general principles of behavioral finance including the following: the heuristic theory, the prospect theory and herding behavior among investors and provide explanation for why investors make irrational decision.

**KEYWORDS:** Behavioral Finance, Modern Portfolio Theory, Efficient Market Hypothesis, Heuristic Theory, Prospect Theory, Herd Behavior

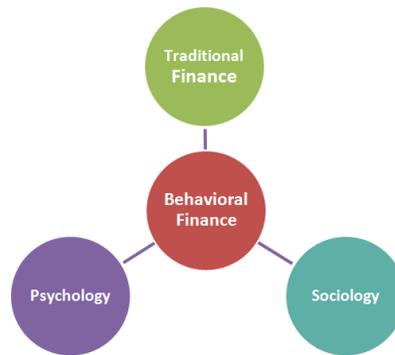
### **INTRODUCTION**

A new field of finance began to gain popularity during 1990s. This was known as 'Behavioral finance'. It seeks to supplement the modern theories of finance by focusing behavioral aspect to provide explanation for why investors make irrational decision. Behavioral finance attempts to explain the psychological and sociological factors influencing the decision-making behavior of individuals and organizations and the ultimate effect on markets. It paves way to provide answers for why investors trade without undertaking fundamental analysis of stocks and what makes them behave irrationally. Lintner(1998) defined behavioral finance as being 'the study of how humans interpret and act on information to make informed investment decisions'. Olsen(1998)opined that 'behavioral finance does not try to define 'rational' behavior or label decision making as biased or faulty; it seeks to understand and predict systematic financial market implications of psychological decision processes.' Ricciardi and Simon(2000)defined it as 'Behavioral finance attempts to explain and increase understanding of the reasoning patterns of investors, including the emotional processes involved and the degree to which they influence the decision-making process.' Hence, myriad of laureats have gauged the growing popularity of behavioral finance and added different dimensions to unfold it.

### **TRADITIONAL FINANCE VS. BEHAVIORAL FINANCE**

The root of traditional finance is strongly associated with the modern portfolio theory (MPT) and the efficient market hypothesis (EMH). Modern Portfolio Theory (MPT) is a stock or portfolio's expected return, standard deviation, and its correlation with the other stocks or mutual funds held within the portfolio. The efficient market hypothesis (EMH) connotes that all information has already been reflected in a security's price or market value, and that the current price of the stock or bond for today reflects its fair value. But Behavioral finance attempts to find answers to why the market behaves differently from its normal course. For instance, the Great Depression of 1929, the stock market crash of U.S in 1987 and the recession of 2008. Thus, under the traditional financial theory, the decisions makers are rational. In contrast,

modern theory suggests that Investors financial decision-making are not always driven by due considerations but are often inconsistent. Investors deal with several cognitive and psychological errors. These errors are called as behavioral biases. Behavioral biases are so deep-rooted that, in short, some investors may need to be “saved” from their poor decision-making, which makes it a significant part of financial decision making. To bridge the gap between the actual behavior of investors and the rational set behavior of investors, behavioral finance has emerged to understand and suggest possible remedies for such biases.



**Figure 1**

## OVERVIEW OF LITERATURE

**Barberis and Huang (2001)** stated that a substantial body of experimental evidence suggests that loss aversion—the tendency to be more sensitive to losses than to gains- and narrow framing—the tendency to focus on narrowly defined gains and losses—play an important role in determining how people evaluate risky gambles. They incorporated these ideas into an asset-pricing framework to see if they can shed light on the behavior of firm-level stock returns. They studied equilibrium firm-level stock returns in two economies: one in which investors are loss averse over the fluctuations of their stock portfolio, and another in which they are loss averse over the fluctuations of individual stocks that they own. Both approaches can shed light on empirical phenomena, but they found the second approach to be more successful.

**Barberis and Thaler(2003)** discussed the limits to arbitrage and psychology, and then presented a number of behavioral finance applications: to the aggregate stock market, to the cross-section of average returns, to individual trading behavior, and to corporate finance. They concluded by assessing progress in the field and speculating about its future course.

**Tversky & Kahneman (1974)** provided three important heuristics namely: representativeness, anchoring and availability bias. These heuristics are highly economical and usually effective, but they lead to systematic and predictable errors. A better understanding of these heuristics and of the biases to which they lead could improve judgments and decisions in situations of uncertainty.

**Kahneman and Tversky (1979)** presented a critique of expected utility theory as a descriptive model of decision making under risk and develop an alternative model, which they called prospect theory. Kahneman and Tversky(1979) found empirically that people underweight outcomes that are merely probable in comparison with outcomes that are obtained with certainty; also that people generally discard components that are shared by all prospects under consideration.

**Odean (1998)** tested and found evidence for the disposition effect, the tendency of investors to sell winning

investments too soon and hold losing investments for too long.

**Kempf and Ruenzi (2006)** examined the extent of the Status Quo Bias (SQB) in a real-world repeated decision situation. Individuals who are subject to a SQB tend to choose an alternative that was chosen previously (i.e. their status quo), even if it is not the optimal choice any more. They empirically examined the US equity mutual fund market and observed strong evidence for the existence of a SQB in this market.

**Phuoc Luong & Thi Thu Ha (2011)** explored the behavioral factors influencing individual investors' decisions at the Ho Chi Minh Stock Exchange. The result showed that there are five behavioral factors affecting the investment decisions of individual investors at the Ho Chi Minh Stock Exchange: Herding, Market, Prospect, Overconfidence-gamble's fallacy, and Anchoring-ability bias. Most of these factors have moderate impacts whereas Market factor has high influence.

**Ricciardi and Simon (2000)** discussed some the principles of behavioral finance including the following: overconfidence, financial cognitive dissonance, the theory of regret, and prospect theory. In conclusion, they also provided strategies to assist individuals to resolve these "mental mistakes and errors" by recommending some important investment strategies for those who invest in stocks and mutual funds.

**Ritter(2003)** provided an introduction to behavioral finance acknowledging the inability of the traditional framework to explain many empirical patterns, including stock market bubbles in Japan, Taiwan, and the U.S. Similar inline work was done by Sewell (2007) discussing many important notable research works.

**Waweru Et Al. (2008)** investigated the role of behavioral finance and investor psychology in investment decision-making at the Nairobi Stock Exchange with special reference to institutional investors. Using a sample of 23 institutional investors, their study established that behavioral factors such as representativeness, overconfidence, anchoring, gambler's fallacy, availability bias, loss aversion, regret aversion and mental accounting affected the decisions of the institutional investors operating at the NSE. Moreover, these investors made reference to the trading activity of the other institutional investors and often exhibited an institutional-herding behavior in their investment decision-making.

**Tekçe (2011)** employed nationwide individual stock investor transaction data for 244,146 investors with a total of 64 million buy and sell transactions in 2011 to analyze how common overconfidence, familiarity bias, representativeness heuristic and status quo bias are among Turkish individual stock investors and what factors affect these biases. It was found that overconfidence and familiarity bias are common among individual investors. Findings of status quo bias are totally in line with overconfidence. Male, younger investors, investors with lower portfolio value and investors in less developed (low income, low education) regions exhibit overconfidence, familiarity bias and status quo bias more.

Overall the findings are far and wide. Hence, one can question what are the psychological factors that are involved by the investors when employing investment decisions? Our objectives are therefore set to find an answer.

## OBJECTIVES

- To provide an understanding of behavioral finance and its connection with the traditional finance.
- To specify the principles or factors governing the investors' behavior in the financial markets.

## METHODOLOGY

The methodology applied in an attempt to understand the behavioral finance is exploratory one. The numerous works of ardent researchers and practitioners is conducted with an intention to present a concise importance of behavioral finance and the principles that influence the investors to behave irrationally in the stock markets.

## FACTORS GOVERNING THE BEHAVIOR OF INVESTORS IN THE STOCK MARKET

According to Ritter (2003), behavioral finance is founded on psychology which suggests that human decision processes are prone to several cognitive illusions. These illusions are classified into two groups: illusions caused by heuristic decision process and illusions rooted from the adoption of mental frames grouped in the prospect theory (Waweru et al., 2008). These two categories along with the herding factors are also presented as the following.

- **Heuristic Theory:** Heuristics are defined as the rules of thumb, which makes the decision making easier, especially in complex and uncertain environments (Ritter, 2003) by reducing the complexity of assessing probabilities and predicting values to simpler judgments (Tversky & Kahneman, 1974). Tversky & Kahneman(1974) and Waweru et al.(2008)were the foremost authors focusing over Heuristics theory. Tversky & Kahneman(1974) gave three factors namely; representativeness, availability bias and anchoring while Waweru et al.(2008) demonstrated two factors namely Gambler’s fallacy and Overconfidence into heuristic theory.
- **Representativeness:** Representativeness heuristic connotes the degree to which a sample is similar to another sample in all essential characteristics. It is based on stereotypes. Representativeness may result in some biases such as investors put too much weight on recent experience and underweight the average long-term rate (Ritter (2003)). Tversky & Kahneman(1974) describe that people often predict the future value of a stock based on representativeness. If this is the case, investors will be inclined to buy stocks, which have been increasing recently (extrapolation bias).
- **Overconfidence:** Overconfidence is when investors tend to over-estimate their reliability of their skills and knowledge, under-estimate risks and exaggerate their ability. Overconfidence promotes the investors to trade too much as well as take high risks. Odean (1998) presents a classic summary of overconfidence in various professional fields such as investment bankers and managers. Additionally, the author finds that overconfidence affects financial markets; overconfidence increases expected trading volume, increases market depth and decreases the expected utility of overconfident traders.
- **Anchoring:** It is described as the common human tendency to rely too heavily, or ‘anchor’ on one trait or Piece of information while making decisions. In financial market, investors take their own time to adjust to new piece of information and anchoring arises when a value scale is fixed by recent observations. Hence, they believe the historical trend to continue which results in under-reaction to specific event. For instance, on dissemination of good information, investors may take the assistance of 52-weeks low price of the stock to slowly adjust their ‘anchor’ up or down.
- **Availability Bias:** Availability bias tends to occur when people make use of easily available information excessively. Investors encounter a challenge when they have to decide to buy a security among many alternatives that is beyond the capabilities of human capacity to analyze and select. Thus, investors will be

inclined to invest in familiar securities and rely over easily obtainable information from local brokers ignoring the fundamental principles set for diversification of portfolio management for optimization.

- **Gambler's Fallacy:** In financial market, Gambler's fallacy arises when people tend to incorrectly presume that the trend will reverse and anticipate the end of good or poor market returns. In addition, when people who are subject to status quo bias, they are prone to select suboptimal alternative simply because it was chosen previously (Kempf and Ruenzi(2006))
- **Prospect Theory:** Kahneman and Tversky (1979) were the people who propounded this theory. This theory intends to cite that the investor's value system affect the decision-making process. They described that some states of mind affect an individual's decision-making processes. They are classified as follows:
  - **Regret Aversion:** Regret Aversion is a psychological bias that is encountered out of excessive focus on feelings of regret at the time of decision making, which turned out to be poor, mainly because the outcomes of the alternative are visibly better for the investor to realize. The root cause of this type of psychological bias is the tendency that people hate to admit their mistakes. Investors may avoid selling loss-making stocks in order to avoid the regret of having made a bad investment choice and the discomfort of reporting the loss. Regret aversion enables the investors to take sub-optimal decisions and holding onto a poorly-performing stock for long. Regret aversion may also occur in error which stops the investors from investing in profit-making stocks on correct time.
  - **Loss Aversion:** Loss aversion is the error that investors assign more significance to losses than they assign to gains. While making investment decisions, losses and disadvantages have greater impact over preferences than gains and advantages. Barberis & Thaler(2003) observed the evidence showing that people are more distressed at the prospect of losses than they are pleased by equivalent gain. Moreover, a loss coming after prior gain is proved less painful than usual while a loss arriving after a loss seems to be more painful than usual (Barberis & Huang (2001)).
  - **Mental Accounting:** Mental Accounting could be said as the set of cognitive operations used by individuals and households to organize evaluate and keep record of financial activities resulting in a tendency for people to separate their money into separate accounts based on a variety of subjective reasons. Individuals tend to assign different functions to each asset group, which has often irrational and negative effect on their consumption decisions and other behaviors. Mental Accounting could be said as the codes of people use when evaluating an investment decision resulting in low or no diversification of investment.
  - **Self-Control:** It is preferred by all the investors to avoid the losses and protect the investments. Investors are subject to temptation and they look for tools to improve self-control. By mentally separating their financial resources into capital and 'available for expenditure' pools, investors can control their urge to over consume.
- **Herding:** Herding effect occurs when a group of investors make investment decisions on a specific piece of information and ignore other pertinent information such as news or financial reports. Investors rely on collective information more than private information. Investors are sensitive to how others perceive their investment decisions. Resultantly, their decisions are biased and influenced by others. In contrast, informed and rational investors usually ignore following the flow of masses, and take decision on the basis of information and this

makes the market efficient. Besides, herding also depends on types of investors, for example, individual investors have tendency to follow the crowds in making investment decision more than institutional investors. Many notable authors have found empirical evidences of herding. Waweru et al. (2008) demonstrated that stock investment decisions that an investor can be impacted by the others: buying, selling, choice of stock, length of time to hold stock, and volume of stock to trade. Investors are cautious of what others do and guide their decisions accordingly.

## CONCLUSIONS

Over the years, traditional finance has taken its root in formulation of investment decision and explained the efficiency of markets. But an alternative theme has emerged recognizing the importance of cognitive and psychological errors associated with the decision-making with regard to investments. Behavioral finance makes an attempt to explain and improve people's awareness regarding the emotional factors and psychological processes of individuals and entities that invest in financial markets. Such behavior is exhibited by many investors, groups and institutions within the stock market. Hence, this paper presented a summary of introduction to emerging theme of behavioral finance followed by its comparison with the traditional finance. The paper has discussed some of the cognitive illusions namely heuristic and prospect theory along with herding behavior to recognize an array of factors influencing the psychological decision-making by investors. Although, the empirical validity of all of these topics will be tested over time as the behavioral finance scholars eventually research and implement concepts, or as other practices start to fad or are rejected.

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