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The role of behavioral finance in modern age investment

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ABSTRACT

Decision making process is very complex task that involves various activities like industry and company analysis along with analysis of past performance of individual stocks/assets. Asunder from this, one of the most important factors that influence the individual's investment decision is cognitive illusions. Individual investor's behavior is influenced by various heuristic and biases, which are brought to light by the emerging field of behavioral finance. This paper provides a conceptual framework of the various principles of Behavioral Finance including cognitive illusion: Heuristics, Overconfidence, Representativeness, Anchoring, Gambler's Fallacy, Prospect Theory, Loss Aversion, Regret Aversion, Mental Accounting and Disposition Effect.

Key Words:Standard finance; Behavioral Finance; Cognitive illusions; Heuristics and Biases.

INTRODUCTION

Behavioral finance is an emerging and rapidly expanding field looking to provide explanations for individual's economic, financial and investment related decision by fusing behavioral and psychological theories with traditional finance. In the last few decades, many academicians and practitioners have contributed to the emerging and evolving field of Behavioral Finance. The present paper is divided into four sections. First section provides some of the definitions of Behavioral Finance. Second section compares standard finance versus Behavioral Finance; and in the third section we discusses on various behavioral theories. In the final section, the paper concludes whole study.

I. DEFINITION OF BEHAVIORAL FINANCE

Shefrin (1999) "Behavioral finance is rapidly growing area that deals with the influence of psychology on the behavior of financial practitioner."

According to Shefrin "Behavioral Finance is the application of psychology to financial behavior-the behavior of practitioner."(Shefrin, 2000)

According to Shefrin "Behavioral Finance is the study of how psychology affects financial decision making and financial markets" (Shefrin, 2001)

According to Fromlet "Behavioral finance closely combines individual behavior and market phenomena and uses knowledge taken from both the psychological field and financial theory" (Fromlet, 2001)

Behavioral finance tries to enlighten and increase understanding of the abstract thought patterns of investors, including the emotional biases involved and the degree to which it influence the decision-making process. Basically, behavioral finance try to explain the what, why, and how of investors' decision influenced by their behaviour. (Ricciardi& Simon, 2000).

2. FOUNDATION OF BEHAVIORAL FINANCE

Behavioral finance is a blend of various disciplines like psychology; sociology and finance (see Figure-1)

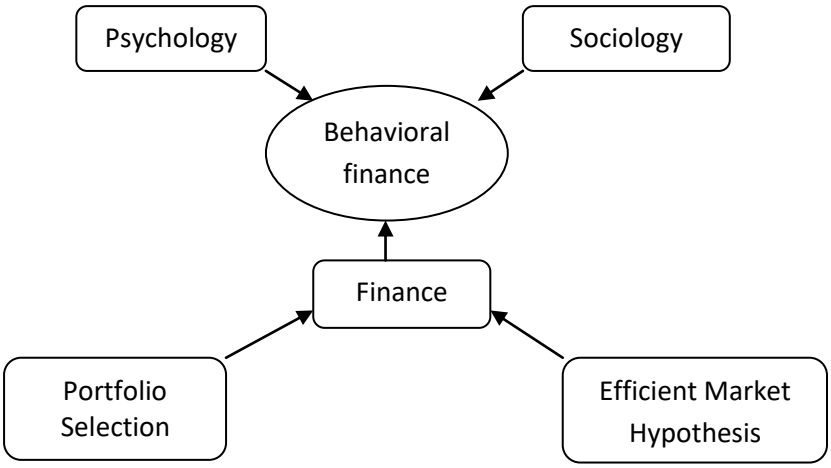

Fig -1

Figure 1 depicts the important interdisciplinary relationship model that integrates behavioral finance with other disciplines. While studying concepts of behavioral finance, traditional finance thinkers have said that the centerpiece aspects of psychology and sociology are integral accelerators within this field of study i.e. Behavioral Finance (Ball, 1978; Dreman and berry, 1995). Consequently, the person studying Behavioral Finance is required to have a necessary understanding in the field of psychology, sociology, and finance to become acquainted with overall concepts of Behavioral Finance. The implication of behavioral finance from the viewpoint of traditional finance is that there are two aspects viz. (i) efficient market hypothesis (EMH) and (ii) portfolio selection which influence investor's decision making process.

Classical Finance (standard finance) thinkers argue that investors' always behave rationally during investment decision or selection of group of securities to achieve an efficient portfolio (Simon, 1956). Standard Finance assumes that market participants i.e. investors, institutions and even market behave rationally and these stakeholders make unbiased investment decisions to maximise their self benefits or financial gain Any individual who makes investment decision behave rationally(Fisher &Statman, 2000).

In 1952, Harry Markowitz had given Modern Portfolio Theory (MPT) during his Ph.D. at University of Chicago. MPT is based on the portfolio expected return, standard deviation, and its correlation with the other stocks or mutual funds held within portfolio. On the basis of these three concepts, an efficient portfolio can be created that maximizes expected return given on minimum risk.

Another main stream of standard finance is known as Efficient Market Hypothesis (EMH). A market said to be efficient with respect to an information set if the price 'fully reflects' that information set (Fama, 1970), i.e. if the price would be unaffected by revealing the information set to all market participants (malkiel, 1992). Since stocks are considered to be at their fair value, exponents contend that dynamic mongers i.e. traders or portfolio managers cannot make superior returns over time that beat the market. Therefore, they believe investors should just own the "entire market" rather attempting "outperform the market" (Ricciardi& Simon, 2000). This premise is supported by fact that the S&P 500 stocks index beat the overall market approximately 60% to 80% of the time (Dowling &Lucey, 2004).

Tversky and Kahenmanstudies of judgment and decision making indicate that people do not always behave in accordance with the classical rational model of economic decision making. The classical analysis assumes that people are perfectly consistent, satisfy criteria of coherence, and have unlimited computational power. The evidence, however, shows that human rationality is bounded by both emotional and cognitive factors.

3. ROLE OF BEHAVIORAL FINANCE IN INVESTMENT DECISION

The notion of the traditional financial theory is that the investor is a "rational man", meaning that the individual investor and manager are "capable of understanding vastly complex puzzle, mathematical process and conduct endless instantaneous optimization. (Monitor, 2002),

There have been a number of studies that challenge rationality; such challenges come from Behavioral Finance thinkers like Kahneman and Tversky's seminal work (Kahneman and Tversky, 1971; 1979). They continue to challenges the traditional financial theories and empirical works. Apart from this, many behavioral researchers continue to publish their in-depth theories and empirical arguments against the notion of utility and the efficient market hypothesis (EMH) in the main field of finance, from this stage behavioral finance has begun to emerge as an alternative to the theories of standard finance.

Behavioral Finance researchers are looking at financial markets from new lenses which allow them to understand market participants including corporate boards, managers, individual investors, and institutional investors, portfolio managers, analysts, advisors, and even policy makers, through psychological angle of human cognition and emotions.

In this study, we discuss how behavioral factors influence individual investor's investment decision. Investor's decisions are subject to several cognitive illusions which are sorted into two broad categories and have been depicted Figure: 2.

CLASSIFICATION OF COGNITIVE ILLUSION

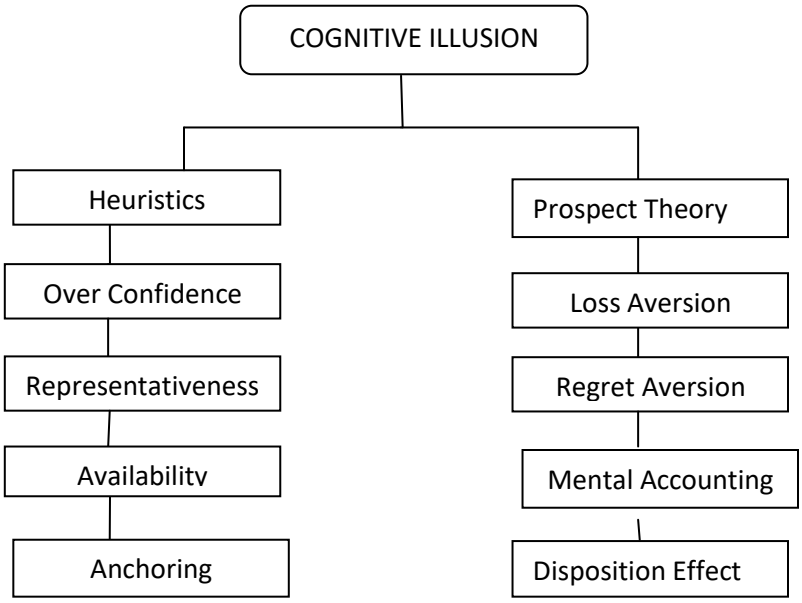

Figure: - 2

Source: KANNADHASAN, **2010**

3.1 THE PROSPECT THEORY

The main focus of prospect theory lies in the idea that investors are more worried about the prospective losses than the prospective gains (Kahneman and Tversky, 1979). According to this theory, people make their choices about the investments on the basis of the potential loss or gain on investment, that potential loss or gain is decided by the specific reference point or "decision weight" which is often called purchase price. For instance, consider an investment selection between:

Option 1: A proposal with sure profit of $ 10,000 or
Option 2: An 80% possibility of earn $ 13,000, with 20% chance of getting no return ($0)
Question: Which option is best and gives you maximum profit?

Majority of people (investors) go with first option, which is essentially a "sure gain or bet." Prospect theory found that majority of the people are risk averse when presented with the prospect of financial gain or profit.(Kahneman and Tversky, 1979) Consequently, investors select option 1 which gives sure gain of $10,000. Basically, this comes out to be rational choice if you think there is a high probability of loss. However, this is in fact the less attractive selection mathematically. If investors selected Option 2, their overall performance on a cumulative basis

would be a superior choice because there is a greater payoff of $ 10,400. On an investment approach, the result would be calculated by: ($13,000 x 80%) + (0+20%) = $10,400.

According to the Prospect theory, if investor is faced a situation of losing money in the investment decision, they often takes less risky decision with an aim of loss aversion.

3.2 MENTAL ACCOUNTING

Mental accounting is cognitive process which is used by individual investors to direct, measure and to know financial activities. Mental accounting reveals tendency of people, who divide their money into separate account on the basis of variety of criteria like the source of the money and intent for each account.

The study by Thaler highlights that there are three components of mental accounting which gets the large amounts of attention. “This first captures how outcomes are perceived and experienced and how decisions are made and subsequently evaluated”. (Thaler, 1999) The method of accounting supplies the inputs to be both preand postcost-benefit analysis. The second component of mental accounting involves evaluation of action to particular accounts including sources and employs of finances are marked in real as well as in mental accounting systems. Expenditures are sorted into classes (housing, food, etc) and spending is sometimes forced by implicit or explicit budgets. The third component of mental accounting refers to the frequency of accounts evaluation and 'choice bracketing'. Accounts can be balanced daily, weekly, yearly, and so on, and can be defined narrowly or broadly. Each and every elements of mental accounting profanes the economic principle of fungibility.

According to prospect theory, profit and losses are taken as an arbitrage point, that is called reference point on the basis of past purchase price. When there is mental accounting, gain or loss is considered as a less important matter. The profit calculated by mental accounting is looked as immaterial until the position is closed. The same psychology drive may be the underlying revenue recognition principle (Hirshlefier and Teoh, 2009).

3.3 REGRET THEORY

Regret is a comparison based emotion of self-blame, and it is experienced when individual actualize or examine that their present outcomes of decision could have been better if they had decided differently in past (Zeelenberg&Pieters, 2007).

According to Regret theory, the individual measures their reaction on the basis of future events and situation (e.g. loss of $5,000 on the selling stock of RIL). Bell (1982) described regret as the sensation, which is caused by comparing a given result or state of actions with the state of an uncertain choice. For instance, "while choosing between an unfamiliar brand and a familiar brand, a consumer might consider the regret of finding that the unfamiliar brand performs poorly than the familiar brand and thus the consumer is less likely to select the unfamiliar brand.

3.4 THE DISPOSITION EFFECT

The tendency of investor to hold losses in investment too long and sell winners in investment too soon has been labeled as disposition effect by Shefrin and Statmen (1985).

Researchers have recognized the tendency in many investors facing difficulty; they quickly sell stocks with raised price and hold the losing stocks. Financial economist and experts called this as "Disposition Effect." Shefrin and Statman (1985) provide the first proper investigation on the disposition effect. In arguing for the existence of the disposition effect, they appeal to the results from an earlier study by Schlarbaum, Lewellen and Lease (1978).

Using stock transaction data from 2,500 individual brokerage firm customers during the period 1964 to 1970, Schlarbaum et al. analyzes the realized returns from round-trip trades for these investors by calculating the returns for stocks bought and subsequently sold. Investors does not consider the performance of stocks that were purchased but not sold during the study period. Judging by these realized returns, the individual investors beat the market by 5 percent per year, and about 60 percent of the trades resulted in a profit. For examine, other studies such as Sharpe (1966), Gruber (1996) and Fama and French (2010) show that the average mutual fund manager underperforms the market and it's very difficult for even the best professional investors to obtain a 60 percent success rate. Based on their evidence, Schlarbaum et al. reason out that individual investors owned good stock in their portfolio.

Shefrin and Statman (1985) interrogate this conclusion. They propose that the accomplished returns come disproportionately from stock choices that turn out to be the successful ones, while the unsuccessful choices remain in the investor's portfolio. Rational and tax conscious investors would realize more losses and avoid realizing gains at least until they receive a long-term tax status, which at the time required a holding period of six months in the United States. Instead, the data of Schlarbaum et al. (1978) show that a 60-40 split of the positive and negative realized returns holding for all categories of round-trip trade duration. In particular, this result is no different for stocks held less than six months versus more than six months.

Shefrin and Statman (1985) also go through an analysis of aggregate mutual fund purchases and redemptions. They determine that more redemption occur during good stock market months than poor months. Taken together, these facts are coherent with a disposition effect.

(Odean, 1998) Concluded "individual investors realizes their profitable stock investments at a much higher rate than their unprofitable ones, except when motivated to realize losses for tax purposes."

3.5 HEURISTIC

Heuristic means rule of thumb that eliminates the search necessary to find a solution to problem. It suggests the shorter routes to simplify the complex methods of measuring the probabilities and values generally required to make judgments, thus eliminating the need for widespread calculations.

In late 1960s and early 1970s, Kahneman and Tversky and few other psychologists worked together on heuristics and biases program. This study dealt with rule of thumb and deviation from rational calculation that is referred as biases. Primarily this heuristics deal with cognitive process, but it also openly incorporates emotional factors. (Kahneman and Tversky, 2000b) stated that the emotional factors were always implicit and it resulted the intuitive judgment, which they characterized as different from strictly rational models of choice. The main objective of the heuristics and biases program has been classification of the deviations from what is indicative by rational choice models, and where it is possible to make possible to reduce those biases.

Simon (1987, p. 267) defines *bounded rationality* as "rational choice that takes into account the cognitive limitations of the decision maker—limitations of both knowledge and computational capacity. Bounded rationality . . . is deeply concerned with the ways in which the actual decision making process influences the decisions that are reached."

Bounded rational individual makes an attempt through mistake in their decision, but later on these decisions are correctable through learning and experience. This approach does not concentrate on potential biases or relentless errors in decision making. Following this approach, researchers extend statements and prove on boundedly rational behavior that often makes superior results (Smith 2003; Gigerenzer 2007; Altman 2012a, 2012b).

3.5.1 THE CATEGORIES OF HEURISTICS AND THEIR BIASES

Tversky and Kahneman (1982a) argue for the predominance of three general-purpose heuristics: representativeness, availability, and anchoring and adjustment. In addition, one of most important factors that influence the decision making process of individual investors known as Overconfidence. Later, Slovic, Finucane, Peters, and MacGregor (2002) bring together the work of many other researchers and explicitly included emotional factors as a general-purpose heuristic under the term affect heuristic. Gilovich and Griffin (2002) list six general-purpose heuristics: affect, availability, causality, fluency, similarity and surprise.

This study only revolves around the four heuristics noted by Kahneman, Slovic and Tversky (1982) and Slovic et al. (2002), namely, Overconfidence, representativeness, availability, anchoring and adjustment.

3.6 OVERCONFIDENCE

Taylor and Brown (1988) People are keeping the impractical optimism as a form of illusory self-enhancing bias that is important to good adjustment and positive affect. Overconfidence can have serious effects, such as enterprising failures (Malmendier and Tate 2005).

Overconfidence is the propensity for human to overrate their noesis, abilities and the precision of their information, or to be excessively florid of the future and their power to control it. (Ackert and Deaves, 2010. p.106)

Overconfidence is a judgmental error in which people overestimate their skill, knowledge, perceive information or expand the subjective probability of particular result happening (Cambell, Goodie, and Foster, 2004; Glaster and waber, 2010).

3.6.1 ROLE OF OVERCONFIDENCE ON INVESTOR'S DECISION MAKING PROCESS

Schaefer et al. (2004) examine the relationship between the big five personality factors and overconfidence. They find out that Extraversion is positively associated with confidence, but not with an accuracy in the test. These results are coherent with outcomes of Extraversion and it is connected to dispositional optimism Williams (1992) and narcissism, which is positively correlated with overconfidence (Paulhus and Williams 2002).

Experience is positively associated with confidence and accuracy, and therefore it is unrelated with overconfidence. Data also shows that the overconfidence of individuals with high level of openness to experience are more confident to seek out chance to discover the diverse field of dominance Schaefer et al. (2004) . In addition, other research find openness to experience to be correlated to wisdom and educated accomplishment (Helson 1985; McCrae and Costa 1985). (Barber and Oden, 2001) examine the overconfidence of investors for each gender. The study tested theory that predicts men are more confidence than women and men will trade more excessively than women. The study used data of over 35,000 households during the period of February 1991 through January 1997. The study revealed that men traded 45 percent more than the women, and their outcomes are worse than women. Men stated high level of counter trading in financial market through Overconfidence.

3.7 REPRESENTATIVENESS

People having a tendency to arrive at judgments grounded on stereotype rather than the underlying characteristics. This is called as representativeness heuristic.

Gilovich (1991, p. 18) explain the fundamentals of the heuristic in more detail: "Representativeness is a tendency to assess the similarity of outcomes, instances and categories on relatively salient and even superficial features, and then to use these assessments and similarity as a basis of judgment. People assume like goes with like."

(Tversky & Kahneman, 1974, p.1124) define the representativeness heuristic as the way in which probabilities are evaluated ". by the degree to which A is representative of B, that is, the degree to which A resembles B." What A and B represent depends on the judgment that is being made. The brain assumes that things that have similar qualities are quite alike.

(Tversky & Kahneman, 1974) state that people are relies on heuristics principle that reduces the complex method of assessing probabilities and preceding values to simple judgmental operations. These judgments are all based on the limited data validity.

Are good stocks from good companies?

Investors picks the good stocks those will perform well in future – is difficult, if not impossible. So how investors deal with such enigma? There only one alternative option is choose "good company, good stock" bias, which is panorama of the representativeness heuristic.

Shefrin and Stateman (1995) stated that investors believed quality of management is highly correlated with value of stock as long term investment (R^2=0.86), that shows future performance of the stock is clearly associated with perception of how well management the firm is. Shefrin (2007) reports parallel high correlations between quality of management and financial soundness ratings: that is, good companies are judged to be safe companies; and between long-term investment value and financial soundness: that is, executives also judge good stocks to be those of financially sound companies.

3.8 AVAILABILITY BIASES

(Kahneman&Tversky, 1974) This is a process in which individual asses their past memory and probability of event by the ease with which instances or occurrences are brought to mind.This heuristic is known as availability. In general availability is based on experience-based, memory-based, or imagination-based. Unfortunately, there is no agreement as to what constitutes different degrees of availability or the weight that should be given to those differences in availability.

3.9 ANCHORING AND ADJUSTMENT

(Tversky&Kahneman, 1974) defined as situations, "people make estimates by starting from an initial value that is adjusted to yield the final answer. The initial value, or starting point, may be suggested by the formulation of the problem, or it may be the result of a partial computation. In either case, adjustments are typically insufficient.That is, different starting points yield different estimates, which are biased toward the initial values. We call this phenomenon anchoring"

4. SUMMARY AND CONCLUSION

Although academia, investment professionals, Policy makers, and individual investors may continue engage into endless debate whether markets are efficient and investors are efficient and they take decision to care for their welfare of wealth, however behavioral finance has made great pace to understand observed behavior.

Heuristic and biases are described as decision making process that undertakes and incorporates the emotional factors as well as cognitive process due to these investors ignoring the trends, facts and analysis. Problems may arise in the acquisition and processing of information and in interpreting the results after using heuristics to arrive at decisions. Decision-maker experience may help reduce biases over time, but analysis shows that the biases are relatively predictable and can be taken into account. The most common biases are attributable to loss aversion, lack of sufficient sensitivity to sample size, failure to allow for regression toward the mean, conjunction situations; overconfidence, undue anchoring, framing the information, and ignoring prior probabilities (base rate data). The last of these is not as serious for finance as for many other areas of decision making. Problems with memory introduce biases into all heuristics.

Behavioral finance seeks to describe the choices not on rational or irrational man, but of real people. The benefits of these insights are already being observed.

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