

COMPREHENSIVE REVIEW OF LITERATURE ON BEHAVIOURAL FINANCE

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ABSTRACT

Investors are rational and that they consider all available information in portfolio investment decision process is the main assumption of standard finance and this holds true by Efficient Market Hypothesis (EMH), being an important theory of Standard finance. Over the years this assumption has been challenged by the psychologists and they argue that investors can't be rational as their decisions are influenced by cognitive and psychological errors. The work done by the various prominent psychologists in this direction resulted in the development of a new branch of financial economics, known as Behavioural Finance. Behavioural finance considers how various psychological traits affect the way investors make their investment decisions. Against this backdrop, in present paper a modest attempt has been made to review various studies in this area so as to have clear understanding of the subject and to see how significant it is in financial decision making. From the review of literature it is deduced that behavioural finance tries to fill the gap between actual behavior (Normal behavior) and expected behavior (Rational Behavior), however, currently there is no unified theory of behavioural finance that gives a proper place to the factors influencing financial decisions of investors.

Keywords: Finance, Behavior, Heuristics, Rationality, Herd, EMH.

Introduction:

A paradigm shift has taken place in recent years in the study of stock market behavior and this shift has changed the direction of research from the study of 'financial environment' to the 'agents of this environment', all this has led to the development of a new field of financial research namely "behavioural finance". Up to 1970s the most of the research studies in the area of finance were directed towards the environment and it's functioning. Financial environment includes different types of markets like bond markets, forex markets, stock markets, commodity markets, OTC (over the counter) markets, real estate markets and cash or spot markets. After this phase researchers realized that in order to understand the environment in itself it is necessary first to understand the psyche of the agents of the environment because these agents (people) are sine-quo-non in the financial environment. These agents of environment are

identified as new 'subject of study' and they include individual investors, fund managers, analysts, broking firms and government. Another important factor that leads to the acceptance of individual agents rather than the collection of agents (i.e. market) as the subject matter of the study was the fact that a few individuals cannot be regarded as the representatives of all the population, as humans are the most diverse entities of the universe. All this has culminated into the fact that the factors (agents) of environment are more important for the study of entire financial environment and as such new subject called "Behavioural Finance" evolved.

Up to 1970s the focus of the researchers in the area of finance was on the logic behind the thinking process of investors and hence the way investor should think in this regard. The element of study was the environment itself as it was thought to be significant enough, so its fluctuations can result in some noticeable change. Normally this era of research can be divided into two phases. During the first phase (i.e.

up to 1952) the dominant force was that of traditional finance theory, wherein it was assumed that investors have no difficulty in making financial decisions and they are well informed, careful and are not swayed by their emotions. The models within the standard finance paradigm assume that investors act rationally and expectedly consider all the available information in portfolio investment decision process. The traditional finance theory also assumes that security prices adjust rapidly to the arrival of new information in an efficient capital market and the current prices of securities reflect all information about the security. However, the question of whether capital markets are efficient became one of the most controversial arguments in finance research. Later on, in the second phase (i.e. during 1960s and 1970s) neoclassical finance came into existence and the major attractions of this period were Capital Asset Pricing Model (CAPM) and EMH, and Arbitrage based Option Pricing theory. Most of the earlier works related to efficient market was based on the random walk hypothesis, which contended that changes in stock prices occurred randomly. This early academic work contained extensive analysis without much theory behind it. In this context, (Fama, 1970) attempted to formalize the theory and organize the growing empirical evidence. Fama presented the efficient market theory in terms of a fair game model, contending that investors can be confident that a current market price fully reflects all available information about a security and the expected price based upon this price is consistent with its risk. He goes one step forward and stated that it would be impossible for a trading system based on current information to have excess returns consistently.

The recent sub-prime crises and earlier South Asian crises obviously resulted in considerable drop in all major stock markets. Most of the stock markets negatively reacted to these crises but they are in itself not very extraordinary. However, what was remarkable were the extreme fluctuations that occur in stock market irrespective of the fact that markets are believed to be efficient. How could these drastic fluctuations occur? Fundamentals can only explain this question to a certain extent. Evidently there is some other force with enough penetrating power to turn the financial world upside down. In this context, review of the earlier studies by Benesh & Peterson (1986), Bernerd & Thomas (1989), and Baruch (1989) contended that the reason for the stock price drift was the earnings revision that followed the earnings surprises and contributed to the positive correlation of stock prices. Similarly Branch (1977) and Branch & Chang (1985) proposed a unique trading rule for those interested in taking advantage of tax selling towards end of the year to establish losses as stocks that have declined. After the new year, the tendency is to reacquire these stocks or to

buy other stocks that look attractive. This scenario produces downward pressure on stock prices at the end of financial year and positive at the beginning of financial year. Such a seasonal pattern is inconsistent with the EMH since it is eliminated by arbitragers, who buy at the end of the year and sell at the beginning of the year. Thus, traditional finance theory plays a limited role in understanding issues such as:

- Why do individual investors trade?
- How do they perform?
- How do they choose their portfolios? and
- Why do returns vary across for reasons other than risk?

During 1980s, the basic assumptions of the standard finance theory were questioned and it was observed that investors rarely behave within the premises of assumptions made in traditional finance theory and as such over last two decades behavioural researchers stated that finance theory should consider observed human behavior in order to analyse changes in the financial markets and the impact of various human biases on the decision making behaviours of the agents of this environment. All this has resulted into new branch of finance namely Behavioural Finance, which mainly studies the psychology of financial decision making. In recent times 'neuro-finance' has become the attraction of behavioural finance researches. The failures of various stock markets world over and perception of economists and consequently the theories they swear by on various occasions has put forward the questions: are people really rational? or, are they swayed by bouts of emotions like fear, confirmation and greed, which could lead to bad decisions? Evidence reveal pattern of irrationality, inconsistency and incompetence in the ways investors arrive at decisions and choices when faced with uncertainty Bernstein, 1998. Thus assumption of EMH that investors take rational and unbiased decisions has been drubbed by psychologists for a long before Nofsinger (2001). The theoretical and experimental work of two famous psychologists Daniel Kahneman and Amos Tversky made some remarkable contributions to psychology literature that served as a foundation and gave rise to this new paradigm. Thus this new branch of financial economics was added in 1980s and then became part of standard finance theories during 1990s.

Behavioural finance is based on the notion of "Bounded Rationality" (Uzar & Akkaya, 2013). The term "Bounded Rationality" is used to designate rational choice that takes into account the cognitive limitations of the decision maker, limitations of both knowledge and computational capacity. Thus the limitations of human beings, in making rational choices, that are the result of basic human nature like emotions, limited mental capacity, limited knowledge etc. act as boundaries of rational thinking and make humans bounded rational rather than full rational

entities. Bounded Rationality is the central theme in the behavioural approaches to economics, which is deeply concerned with the ways in which the actual decision making process influence, the decisions that are reached Tseng (2006). It is behavioural finance that tends to explain such anomalies in the traditional finance which cannot be explained by classical financial theories. Behavioural finance considers how various psychological traits affect the ways that individuals or groups act as investors, analysts, and portfolio managers. Investors are “rational” in standard finance but they are “normal” in behavioural finance. Rational people are about utilization features but not value expensive ones, are never confused by cognitive errors, have perfect self-control, are always averse to risk, and are never averse to regret. Normal people do not obediently follow that pattern. Thaler in his paper “Towards a Positive Theory of Consumer Choice” argued that the orthodox economic model of consumer behavior is, in essence, a model of Robert-like experts and no human psychology/biases play any role in financial decision making (Thaler, 1980). The traditional finance researchers see financial settings populated not by the error prone and emotional “Homo Sapiens”, but by the awesome “Homo Economicus”. Behaviorists in finance seek to replace Homo Economicus with a more realistic model of the financial actor (Bloomfield, 2010). After all the market performance is determined by people and they cannot always be considered rational in all their investment decisions, especially during times of financial distress because one has to analyse how investors process information to reach decisions and preference regarding investments (Shefrin, 2000). Under the behavioural finance it is argued that if the assumption of full rationality was relaxed, various financial phenomenon would be better understandable. Subsequently different models came into being. Some of the models assume that investor only fail to update their beliefs promptly, while other consider scenarios where they were updating their beliefs rationally, but making narratively questionable choices. The behavioural finance does try to prove any of the traditional theories obsolete but essentially tries to achieve the ways to supplement the traditional finance theories by merging it with human psychology, so as to determine complete model of human behavior in the process of investment decision making (Thaler, 2005), as such traditional finance stays at the heart of behavioural finance (Uzar & Akkaya, 2013). Thus to identify the origin of behavioural finance and the factors that lead to criticism to age old assumption of rationality of traditional finance is a multi-dollar question to answer.

Objectives:

The study aims at to achieve the following objectives:

- To review available literature on the subject,

- To figure out a unified theory of behavioural finance that will help in identifying portfolio anomalies of traditional finance theory.

Review of Literature:

The proposition that has dominated finance for over 30 years is Efficient Market Hypothesis (EMH). EMH is based on three basic theoretical arguments: firstly, investors are rational and thus they value securities rationally; second, people consider all the available information before making investment decisions; and lastly, decision makers always pursues self-interest. However, it has been noticed that investors are exposed to a range of decision making biases that negatively affect their investment performances. Investors in the stock market are inclined towards behavioural biases, which make them to commit cognitive errors. While trading in liquid assets one needs to be aware of the ideas such as market sentiments, resistance, support etc. (Dehnad, 2011). Under difficult and risky situations investors make predictable, non-optimal choices because of heuristic simplifications. Thus, behavioural biases abstractly are defined in the same way as systematic errors are in judgment (Chen et al, 2004). Advocates of behavioural finance have been able to explain a number of these biases as psychological characteristics and these behavioural traits have a significant relation with the decision making process of the investors (Shahzad et.al. 2013). The investors, who are not literate enough to do the detailed financial analysis base their decisions on various heuristics like fear, affect heuristics and anger. Fear helps investors in taking precaution in financial decision making process, while affect heuristics and anger have negative impact on the decision making process of the investors (Hassan et. al., 2013). Throughout the past five decades researchers have distinguished specific biases in their studies and behavioural finance research relies on a broad collection of evidence pointing to the ineffectiveness of human decision making in various economic decision circumstances (Pompian, 2006). Some researchers refer to biases as heuristics (Brabazon, 2000; Parikh, 2011) while classifying biases along cognitive or emotional lines (Shane, 2005; Kristensen and Garling, 1997; Montier, 2002). However, experts of behavioural finance believe that investors are more affected by cognitive errors than behavioural biases (Jureviciene & Jermakova, 2012). Proponents of behavioural finance have argued that investors make seemingly irrational or illogical decisions when they spend, invest and mostly these investment decisions are based on hunches or emotions (Sewell, 2007; Shefrin, 2000; Belsky and Gilovich, 1999; Fama, 1998). Herbert (1979) has proposed much earlier that decision makers should be viewed as

“Boundedly Rational”, rather than rational, and has offered a model in which utility maximization was replaced by satisfaction; however, Gustavo (2010) argued that consensus as there appears to be around bounded rationality is only very superficial.

While the expected utility theory implies that people depart from risk neutrality only when facing prospects that might have a major effect in lifetime wealth, which is not true. Loss Aversion, i.e. tendency to feel the pain of a loss more acutely than the pleasure of an equal gain, and mental accounting i.e. the tendency to isolate each risky choice, must be the key components of a good descriptive theory of risk attitudes. Economists should realize that now expected utility theory is an ex-hypothesis, and should concentrate on developing better descriptive model of choice under uncertainty (Rabin & Thaler, 2001). Mostly investors are risk averse and prefer investment in assets that are safe, familiar and offer security of capital (Srivastava, 2012). Huberman (2001) revealed that people invest in the securities that they are familiar with though it goes against the advices of portfolio theory and this is termed as home country bias. Loss aversion provides complete account for risk aversion for risks with equal probability to win or lose (Novemsky & Kahneman, 2005). Nothing can be said about the normative status of loss aversion or of other reference effects but there is a principled way of examining the normative status of these effects in particular cases (Tversky & Kahneman, 1991). However, the boundaries of loss aversion can be explained through emotional attachment and cognitive perspective (Ariely et al, 2005).

The standard finance theory argues buying and selling of a security should have been outcome of various relevant but significant factors other than the purchase price of the security itself, however, research has shown that investors base their buying-selling decisions on their sale prices and sales price acts as a reference for their decision. This effect is known as ‘disposition effect’ (Kaneko, 2004). Even when the past price trends are not known and people are told that price changes are independent, investors want to know past trends and these past trends act as reference points and this effect is known as ‘reference point effect’ (Weber & Camerer, 1998). Although the disposition effect may affect market prices, its economic significance is likely to be greatest for individual investors. Individual investors prefer to sell winners and hold losers, except when tax motivated selling prevails (Odean, 1998). Male and female investors significantly differ in disposition effect (Lin, 2011). Economists believe that only incremental costs should influence investment decisions and the past investment i.e. sunk costs should have no effect on

the present investment decisions but research has revealed that people hold investments which otherwise they would have ignored because they have incurred sunk costs in these investments (Arkes & Blumer, 1985). People feel a sense of belonging to the project/ asset in which they have incurred a sunk cost and this may also be explained via endowment effect. Endowment effect and loss aversion are the fundamental characteristics of references (Kahneman et. al., 1990).

In the situations of decision making under uncertainty under standard finance investors’ decisions are assumed to follow the rules of probability. But in violation to Bayes’ rule, most people over-react to unexpected and dramatic news events (Bondt & Thaler, 1985). The winner-loser effect cannot be attributed to changes in the risk as measured by CAPM beta. The earnings of the winning and losing firms show reversal patterns that are consistent with overreaction (Bondt & Thaler, 1987). The overreaction anomaly can be explained by behavioural finance theory (Reedman, 2005).

People have erroneous intuitions about the law of chance. In particular they regard a sample randomly drawn from a population as highly representative (Kahneman and Tversky, 1971) and “representativeness” plays a key role in intuitive predictions made by investors (Kahneman and Tversky 1972, 1973). The three heuristics and biases i.e., ‘representativeness’, “availability”, and “anchoring” as used by the investors in various decision situations leads to improve their judgment in situations of uncertainty. The choice of investors is also affected by the “framing effect”, which refers to the way in which the same problem is explained in different ways and presented to decision makers and effect helps one to study how axioms of rational choice does not hold (Tversky and Kahneman, 1981). Framing also results in the violation of the rule of dominance. The role of transparency and the significance of framing are consistent with the concept of bounded rationality (Tversky & Kahneman, 1986). The investors place much more weight on the outcomes that are perceived more certain than those that are considered mere probable, a feature known as the “certainty effect” (Kahneman and Tversky, 1979).

Another tendency among people was recognized that they segregate their money into different accounts based on varying criteria and treat these accounts differently, leading to another behavioural bias known as “Mental Accounting” (Thaler, 2008). Investors along with many other biases were seen exposed to this bias as well (Jureviciene & Jermakova, 2012). Thaler made a remark in National Bureau of Economic Research (NBER) conference to traditionalist Robert Barro and said “The difference between us is that you assume

people are as smart as you are, while as I assume people are as dumb as I am". This statement beautifully illustrated how modest differences in traditional and behavioural viewpoints can be amplified by framing and presentation. Normal consumers, unlike experts, do not spend whole of the time in thinking about the decisions they have to make. They simply follow some simple rules to arrive at decisions, rather than going into some experts' complex models and details (Thaler, 1980). Thaler (1999), in an article "The End of Behavioural Finance," predicted that in the not-too-distant future, the term behavioural finance will be correctly viewed as a redundant phrase. What other kind of finance is there? In their enlightenment, economists will routinely incorporate as much 'behavior' into their models as they observe in the real world. After all, to do otherwise would be irrational"

Often investors hold on to losers too long and sell winners too soon. Apparently, investors fear losses much more than they value gains. This is explained by "prospect theory", which contends that utility depends on deviation from moving reference points rather than absolute wealth (Kahneman and Tversky, 1979). Another bias documented by Solt and Statman (1989) for growth companies is over confidence in forecasts, which causes analysts to overestimate growth rates for growth companies and over emphasize good news and ignore negative news for these firms. Investors generally think they are smarter and have better information than they actually do (Pompian, 2006; Shefrin, 2000). Investors are positive about the likely performance of the shares that they own rather than the ones they don't own (Hassan et al, 2013). Investors exhibit behavioural biases and make poor trading decisions, while as experienced investors make more trading mistakes (Chen et al, 2004). A common trait among investors is a general over confidence of their ability when it comes to pricing stocks and to decide when to enter or exit a market. These tendencies were researched by Odean (1998) and he manifests that traders who conduct trades were average and had under performance compared to market. Further, psychologists have determined that over confidence causes people to overestimate their knowledge, under estimate risks and exaggerate their ability to control events. Studies reveal gender has an impact on overconfidence and generally men are more overconfident compared to females (Bondt, 1998 & Lin, 2011). This type of behavior exhibits the highest level of over confidence (Nofsinger, 2001). Sometimes investors disregard the reason that stocks evident drop, the anchored higher price is mentally considered its "rightful" price. The stock is therefore believed to bounce back over a certain time period (Phung, 2008; Fagerstrom, 2008).

An investor generally feels that the stocks of growth companies will be good stocks. This bias is referred to as 'confirmation bias', whereby investors look for information that supports their prior opinions and decisions. As a result, investors place incorrect value for the stocks of generally popular companies. Similarly some investors have tendency to think that one would have known actual events prior to the time when they actually unfold, had one be present then or had he paid serious attention, referred to "Hindsight Bias" (Shiller, 2000; Hertwig et al, 1997). In this context, Monti and Legrenzi (2009) investigated that relationship between investment decision making and hindsight bias and concluded that there is a strong evidence for the consequences that hindsight bias has affected the investor's portfolio decisions, portfolio allocation and risk exposure. Sometimes an investor operates in stock market under the perception that errors in random events are self-correcting and present trend will reverse automatically, is generally referred to as "Gamblers Fallacy Bias" (Kahneman and Tversky, 1971; Shefrin, 2000). Gambler's Fallacy is believed to be a product of "Representativeness" and analysts are prone to exhibit Gambler's Fallacy (Shefrin, 2007).

A study by Brown (1999) explained the effect of noise traders on the volatility of closed-end mutual funds. When there is a shift in sentiments, these traders move together which increases the crisis and the volatility of the securities during trading hours. The noise traders normally tend to follow newsletter writers, who in turn tend to follow the herd. The researchers have stated that the herd are always wrong and actually contribute to excess volatility (Economo et al, 2010; Welch, 2000). Investors apply to herd behavior because they are concerned of what others think of their investment decisions (Scharfstein and Stein, 1990) and it been seen that gender has a remarkable effect on herding (Lin, 2011). Banerjee (1992) made an attempt to develop a simple model wherein he studied the rationale behind this kind of deficiency is that firstly, the realities within the model are assumed ones and secondly, the decision makers under this model are classified under two categories only. The role played by these assumptions in reaching the equilibrium was further analysed by Morone (2008) and he argued that the assumption 'whenever a decision maker has no signal and everyone else has chosen zero, he/she will always choose zero' was replaced by the assumption 'whenever a decision maker has no signal and everyone else has chosen zero, he/she will always choose randomly among all possible actions' and it was concluded that breaking herd behavior is possible. Chandra (2008) explained the impact of behavioural factors and investors'

psychology on their decision making and examined the relationship between investors' attitude towards risk and behavioural decision making. The findings of the study reveals that unlike the classical finance theory, the investors do not always make rational investment decisions. They are influenced by behavioural factors like greed and fear, cognitive dissonance, heuristics, mental accounting and anchoring. Many experienced retail brokers believe that investors use various decision criteria while choosing stocks. Contemporary concerns such as international operations, environmental track record and the firms' ethical posture are given only cursory consideration by experienced stock investors, although some mutual funds specializing in such stocks have been successful in attracting investors (Nagy & Obenberger, 1994). Standard finance cannot explain the behavior of investors and in order to understand this behavior we need both standard finance as well as behavioural finance (Sadeghnia et al, 2013). Statman (1995) in his paper 'Behavioural finance versus Standard finance' argued "Standard finance is indeed so weighted down with anomalies that it makes much sense to continue the reconstruction of financial theory on behavioural lines". Realities put forward by the prospect theory and regret aversion theory while heuristics also seem to play their role in decision making process of the investors (Ahmed et al, 2011). While standard finance theory assumes rationality of investors, behavioural finance theory assumes their 'bounded rationality' and investors being humans cannot be assumed as 'complete rational' (Uzar & Akkaya, 2013). Shefrin (2001) describes escalation bias, which causes investors to put more money into a failure that they feel responsible for rather than into a success. This leads to the relatively popular investor's practice of averaging down on an investment that has declined in value since the initial purchase rather than consider selling the stock if it was a mistake

Researches reveal arguments in favour of both the theories. None of the theories can be considered absolute inoperative. Behavioural finance acts as a supplement, and not as a replacement, in order to explain those phenomena that cannot be explained by the classical finance theory (Birau, 2012 & Singh, 2012). Theories of behavioural finance that are built on the models of standard finance can help the investors to understand their own behavior and thus help them to improve upon their decision making process (Sewell, 2007 and Kannadhasan, 2006). Opiela (2005) found that behavioural understanding of decision making process not only help the individual investors but also investment planners who can understand their own behavioural biases and also the biases their clients are prone to while taking investment decisions. Thus helping themselves and

the clients to overcome these biases, as there is possibility to overcome these biases by following simple expert suggestions. Individual traits can influence ones' behavior and hence influence their financial decisions (Kiyilar & Acar, 2009).

In order to provide a room for the limitation of the standard finance model, behavioural finance has added a few assumptions about the cognitive limitations to the basic models of standard finance (Kahneman, 2003). Adaptive market hypothesis can better explain the market behavior as compared to EMH (Tseng, 2006). Behavioural finance cannot be considered as a separate discipline but instead a part of main stream finances (Ritter, 2003). The efficient model theory has failed to such an extent that it would be impossible to attribute this failure to as data error, price index error or change in tax laws (Shiller, 1981). This philosophy is so strong that we need to redefine and readjust our legal fundamentals to the new insights of behavioural finance (Spindler, 2011).

Conclusion:

Up to 1970s when the focus was on the study of the environment, the agents of the environment were set under some basic assumptions of standard finance theory. These assumptions were unrealistic and hence lead to erroneous conclusions. So during 1980s when these assumptions were questioned the agents of the decision making process and environment, i.e. the people became the subject matter of the study. This gave rise to a different branch of finance called behavioural finance, wherein analysis is made about the role of psychological biases in decision making. This branch tried to relax the assumptions of standard finance theory and build the improved models of decision making process. From the analysis of the review of literature it can be deduced that currently there is no unified theory of behavioural finance but the emphasis has been on identifying portfolio anomalies that can be explained by various psychological traits in individuals or groups when it is possible to develop highly lucrative portfolio by exploiting the behavioural bias and to recognize that rational behavior and profit maximization is not complete since it does not consider individual behavioural traits/biases of investors, analysts or portfolio managers. Further, behavioural finance only acts as a supplement and not as a replacement to standard finance theory because it explains those phenomena that cannot be explained by the traditional finance theory. Theories of behavioural finance that are built on the models of standard finance can help the investors to understand their own behavior and thus help them to improve upon their decision making process keeping in view the models of traditional finance theories.

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