



Management

RATIONALITY: A CENTRAL POINT BETWEEN TRADITIONAL FINANCE AND BEHAVIOURAL FINANCE

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Abstract

Investment plays an important role not only in the life of an individual but also in the development of countries. People save money for the purpose of future consumption and invest the saved money with the objectives of protecting the real value of money and making more money. Bodie, Kane & Marcus (1998) defined the term investment as the current commitment of money and other resources with the expectation of obtaining future benefits. Investment decision making is an important aspect in the process of investment, which relates with the selection of one or more investment options for investing the money.

Keywords: Investment; Rationality; Traditional Finance; Behavioural Finance.

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1. Introduction

Since 1970s a fundamental change could be observed in the field of finance regarding investment. There is a shift from traditional mathematical modeling approach based on the assumptions of fully rational investors and perfectly efficient markets (Muth, 1961; Fama, 1970) to a behavioral approach based on the assumption of bounded rational investors whose decisions are influenced by their emotions, cognitive and behavioral biases, and social aspects and they use heuristics for making investment decisions (Gilovich, 1991; Plous, 1993; Arthur, 1995; Mellers and Schawrtz, 1998; Gilovich, Griffin, & Kahneman, 2002; Barberis and Thaler, 2003; Tesfatsion, 2006).

Traditional finance theories viewed investors as rational and emotionless people. In other words traditional finance assumes that people are not affected by biases or emotions and developed its models based on this assumption. Traditional finance is the area of knowledge consists of the

Arbitrage Theories of Miller and Modigliani, the Portfolio Theories of Markowitz, the Capital Asset Pricing Model of Sharpe, Lintner & Black, and the Option-Pricing theory of Black, Scholes & Merton (Statman, 1999). Efficient Market Hypothesis (EMH) is also another main theme in standard finance and it was a very popular one up to 1980s. According to the traditional finance, a rational investor always tries to maximize his utility or return from his investment for a given level of risk. In other words, rational investors have an investment objective of maximising their risk-return tradeoff. Baker, Hargrove & Haslem (1977) found that investors behave rationally and they provide more emphasis to risk-return tradeoff of their investments.

Many behavioural finance based scholars opposed and challenged the traditional finance theories and who argued that traditional finance theories failed to solve and explain real life problems. Olsen (1998) argued that traditional finance is an incomplete one since it failed to consider the behavioural factors. Studies done by Kahneman and Tversky (1979), Shefrin and Statman (1994), Shiller (1995) and Shleifer (2000) proved that the assumption of rational and utility maximising economic decision makers are unrealistic one in the real world circumstances. Kahneman and Tversky (1974) mentioned that human behavior is guided by the simplified procedures or heuristic. Researchers argued that not only markets do not behave precisely as indicated by the traditional market theories, but also the individual investors do not behave in agreement with the principles of expected utility while making investment decisions under uncertainty (Kahneman and Taversky, 1979; Machina, 1982). They also found that under the influence of various subjective factors such as information, risk tolerance, awareness and assessment, personal qualities and investor emotions, mood and expectations; behaviour of real investors deviate from rational behaviour (Bodie, Kane & Marcus, 2008).

2. Objective of the Study

Herbert Simon and Daniel Kahneman made noteworthy contribution to the field of finance by introducing the concept of bounded rationality and prospect theory respectively. Their contributions supported to bring the field of finance to a new track. Traditional finance and behavioural finance are two major paradigms in the field of financial management with different views and approaches on investment behaviours of people based on the assumption of investor rationality. The objectives of the study are to examine the role of traditional finance and behavioural finance in explaining the investment decision making based on the theme of investor rationality and to piece together the important developments and contributions in these areas. This study attempts to achieve this objective by reviewing the theories, concepts and previous studies.

3. Significance of the Study

Investors make their investments with the objectives of increasing their wealth. However, performance of investment highly depends on the quality of the investment decisions made by investors and the quality of the investment decisions may be affected by various factors including personal factors of investors. Traditional finance assumes that investors exhibit complete rationality while making investment decision and always try to maximise their return. Whereas behavioural finance rejects the assumption of perfect rationality and it explains the role of various biases in the process of investment decision making. Thus recently researchers show

much interest in the irrational investor behaviour and its consequences and the numbers of studies in these areas are growing. Researchers from various countries are interested in studying market uncertainty and inefficiency, market anomalies, influence of psychology on investment decisions and behavioural biases.

This study will support investors to improve their awareness in the concept of rationality and its role in decision making. This understanding helps them to identify and avoid their investment mistakes and to improve the quality of investment decision making and performance.

This study attempts to collect and view the major concepts and previous studies regarding investor's rationality and it will serve as a source for future researchers in this area and policy makers.

4. Rationality

Rationality is a normative and perfect decision-making model of individuals. Simon (1982) defined the term rationality as a mode of behavior that is suitable to the achievement of specified goals, within the boundaries of certain conditions and constraints. According to Barberis and Thaler (2003) the term rationality includes two aspects. First, when investors get new information, they update and renew their beliefs in the approved manner, in the way specified by Bayes' law. Secondly, as in the Savage's notion of subjective expected utility, investors make choices that are normatively acceptable. Statman (1988) proposed that a rational investor should analyze and evaluate information comprehensively to succeed in their investment activities. According to Simon (1955), investors have unlimited cognitive and computational capacity with super mind and it supports investors to considers all possible choices and their outcomes. They only value money or consumption with the objective of maximizing self-interest. The value so assigned could not be affected by the factors as unanticipated increases in fear or regret, temper, and familiarity with a particular state of affairs.

Additionally, they rectify beliefs in the accepted manner with the reception of new information. Further, they are either risk neutral or risk averse. Generally, rational investors be inclined to obtain new information about the market and the behaviour of other investors. However, providing information is not sufficient to achieve better investment performance and unless the information is properly understood by the investors, investment performance cannot be improved (Hughes, 2008). Therefore the quality of the judgment and decision making of individuals are the important elements of the concept of rationality. Behavior of an individual is tend to be rational to the extent to which it is efficient, effective and consistent and the maximizing principle can be considered as a motivating factor for rational investors.

A rational decision is an outcome of a systematic decision making process and it seeks to achieve the objective of maximizing expected profits (Robbins and Judge, 2007). Rational decision theory states that in order to solve problems, decision makers develop various strategies and follow specific logical processes by considering nature of the problem, decision environment and timing (Lin, 2011). Mintzberg, Raisinghani & Theoret (1976) proposed a three stages based rational decision-making process and the stages are: problem identification, development of alternatives and selection. The first stage of problem identification relates with identifying the

nature of the problem and searching for related information. In the second stage, problem-solving methods will be developed and finally alternative solutions to make an optimal and best possible choice will be assessed and final decision will be attained. Thus practical experience and technical knowledge are very essential for rational decision making.

Decision making can be categorized in to three types based on the level of rationality. The first type is pure rationality which is the most rational type, in which optimum decisions will be made by decision makers with the backing of unlimited resources, time, and knowledge (Gianakis, 2004). The second type is incremental type of decision making, which is a less rational model and decisions are made by evaluating a number of instantaneously available alternatives. The bounded rationality is the final type which is a combination of the pure and incremental types of decision making that indicates the attainment of specified goals subject to subjective constraints (Simon, 1982, 1991). In general, economic rationality refers to unbounded rationality. This implies that the objectives are known and well-defined, the entire information is available to decision makers and used in an unbiased manner, and choices are consistent.

5. Rationality in Standard Finance

The standard finance is based on the assumption of investor's rationality and traditional theories in finance assume that decision makers make decisions after evaluating all available information. Rational investors make their investment decisions with the objective of maximizing their risk-return tradeoff. They have all the information that is necessary for estimating return and risk of various investment alternatives and make investment decisions based on these information. Generally rational investors have a tendency to estimate the fundamental values of financial assets. A normative model of rational choice under risk is offered by the expected utility theory developed by Von Neumann and Morgenstern (1947). According to the expected utility theory, investors are entirely rational, have the ability to deal with complex choices, are risk-averse and need to maximize their wealth. Investors maximize their well-being, given their preferences and constraints, by aggregating the probability-weighted outcomes, quantified in terms of utility. In other words, investors select the portfolio that enhances their expected utility measured in terms of expected return whilst diminishes the risks or losses.

The Capital Asset Pricing Model (CAPM) presupposes that all the investors are rational and have access to the same information. They also analyze the information in the same way. Thus, it is expected that all the investors should hold the same optimal risky portfolio with the same weights for each financial assets in the portfolio (Sanfey, Rilling, Aronson, Nystrom & Cohen, 2003).

Fama (1965) proposed that in an efficient financial market, rational investors can instantly and autonomously reflect the market information in order to maximize profits and no one can continuously defeat the market to earn the excess profits. The fundamental assumption of the Efficient Market Hypothesis is that investors are entirely rational and are able to price securities rationally. It implies that investors have the ability to decide the fundamental value of securities. According to De Bondt, Mayoral & Vallelado (2013) the assumption of rationality in traditional finance has two implications: investors renew their belief in current manner and make investment decisions in line with subjective expected utility theory. Roger (2011) stated that

according to standard economic models investors' process information as indicated by Bayes' rule and the objective of their investment is to maximize their utility. Loewenstein, Weber, Hsee & Welch (2001) argued that investors consider and assess the costs and benefits of all possible alternatives and pick the alternative with the best risk-benefit trade-off. They also indicated that this pattern of investor behaviour can be observed in the traditional finance theories of Markowitz portfolio theory and the Capital Asset Pricing Model.

In addition, Samuelson and Zeckhauser (1988) indicated that during the investment decision making process, investors assess alternative investment assets based on the expected utility and choose the alternative asset which presents the maximum expected utility. Nagy and Obenberger (1994) mentioned that investors provide more emphasis for wealth maximization. Lai, Low & Lai (2001) and Albaity and Rahman (2012) stated that Malaysian (institutional) investors appear to be rational and cautious in investment decision making. They exhibit risk neutral attitude, make decisions based on their skills and fundamental analysis and heavily rely on information for their decisions.

6. Criticisms Against Rationality

Rational human being is assumed by traditional economic and financial theories, but in the real world situation, it is not possible and investors exhibit irrational investment behavior due to distortion in perception, interpretation of different situations and wrong judgments (Babajide and Adetiloy, 2012). Behavioral economists challenge the idea of perfect and complete rationality and provided evidences for the effect of psychological and emotional factors on investment decision making. In the later part of the 1970s and in 1980s, a large number of studies were carried out to compare the actual behaviour of investors with the rational behaviour stated in the traditional finance. Researchers have proven that investors do not act in a purely rational manner and their investment decisions are influenced by various factors such as demographic factors, psychological biases, heuristics, social affiliation, and so on (Kumar and Lee, 2006; Baker and Wurgler, 2007; Garling, Kirchler, Lewis & Van Raaij, 2009; Barnea, Cronqvist & Siegel, 2010). Studies of Muhammad and Abdullah (2009), Mansor and Lim (1995) and Banarjee (1992) found that investors are partly rational when making financial decisions.

March and Simon (1958) argued that in the course of the investment decision making process individual investors face the problem of lack of vital information on the definition of the problem and the relevant criteria. Shefrin (2000) and Slovic (1972) described the investors as imperfect processors of information and they also stated that investors exhibit the tendency to commit mistakes and have perceptual problems. Simon (1957) argued that in solving complex issues people face the problem of having limited capacity of processing information and traditional theories provide a misleading explanation of financial behavior of people. According to Hindess (1998), due to lack of capacity, individuals are unable to take account of all the available information, gather comprehensive list of all possible alternative courses of action, and determine the value and probability of each of possible outcomes. Ahmed, Ahmad & khalil (2011) observed that individual investors in Lahore Stock Exchange, fail to make investment decision by considering all available information and they make irrational decisions. Hirshleifer and Teoh (2003) argued that in some situations due to their limited concentration spans, individual investors may fail to consider certain important aspects of financial statements that are

disclosed subtly and not directly. Further, Grossman (1976) and Grossman and Stiglitz (1980) argued that existence of perfectly efficient information market is impossible in the real world. Letkiewicz and Fox (2014) stated that in the real market situation, various complicating factors may exist.

According to Statman (1995), investment decision making process of investors is influenced by behavior and psychology in terms of risk assessment and the issues of framing. Risk assessment indicates the process of establishing information concerning appropriate levels of a risk. The manner in which investors process information and make decisions depends on how the information is presented. A sufficient number of studies proved that when the decision involves conditions of risk and uncertainty, feelings have noteworthy impact on decision-making (Zajonc, 1980; Forgas, 1995; Isen, 2000; Loewenstein et al., 2001). In the same way, emotions also play an important role in decision making (Fenton-O’Creevy, Soane, Nicholson & Willman, 2011). Statman (2011) argued that investors are persuaded by short term phenomena due to the influence of emotional factors such as greed, fear and anxiety. In addition, Sultana (2010) pointed out that not in all situations individual investors rely on calculations to take investment decisions and in some situations irrational emotions play an important role in decision making process of investors. According to financial psychology, there are many irrational components in human cognition and cognitive illusions in intuitive judgment have an impact on investment decisions (Kahneman and Riepe 1998).

Daniel, Hirshleifer & Subrahmayam (2001) identified a number of common and frequent investment behavior regarding investment decision making and they are: individual investors demonstrate loss-averse behavioral pattern, investors fail to participate in all financial asset categories in market, investors tend to trade too aggressively, in share purchase decisions investors often use past performance of stocks in order to evaluate the future performance of them, investors behave parallel to each other, and higher level of influence of historical high or low trading stocks. Similarly, Conlisk (1996) argued that people tend to show intransitivity, misunderstand statistical independence, fail to realize the law of large number effects, fail to update probabilities correctly on the arrival of a new information, make false inferences concerning causality, usage of irrelevant information, fail to consider relevant information, display overconfidence and fail to discount the future consistently. March (1994) identified four kinds of human fallacies such as limited concentration, faulty memory, limited comprehension capabilities, and limited communication competencies and he also stressed that these limitations make barriers in reaching the idea of complete rationality.

Hoffmann, Eije, & Jager (2006) argued that in a less than perfect world situation, investors are bounded in their rationality. Rekik and Boujelbene (2013) found that Tunisian investors do not always act rationally while making investment decisions. Sevil, Sen, & Yalama (2007) concluded that the decision processes of small investors in stock exchanges are not completely rational as indicated by the standard finance theories and models. According to Kahneman and Tversky (1979) under the pressure of uncertainty, investment decisions of individual investors diverge from those predicted by standard economic theory. Due to the limited nature of time and cognitive resources, individual investors are unable to analyze the data in order to achieve the optimum decision. Thus, they are compelled to adopt imperfect decision making procedures or heuristics. Human judgment may take heuristic shortcuts that systematically deviate from the

fundamental principles of probability (Hirshleifer 2001). Barberis and Thaler (2003) indicated that even though expected utility model is viewed as a guideline for rational decision-making, various studies proved that people methodically infringe the expected utility theory when choosing among risky gambles.

Efficient Market Hypothesis was challenged by various researchers based on the argument that arbitrage failed to wipe out mispricing caused by the irrational investors. Shleifer and Vishny (1997) mentioned that arbitrage may be limited owing to high cost. Arbitrageurs may require higher amount of capital because of marking-to-market, as prices depart more and more from their efficient values. In addition, Daniel et al. (2001) argued that because of risk averse behaviour, arbitrageurs may not be able to eliminate mispricing. Further there are some arguments in opposition to the view of Efficient Market Hypotheses that irrational traders would cease to be influential in the long-run. According to DeLong, Shleifer, Summers & Waldmann (1991) irrational investors may be overconfident people and in the long run, they can earn greater returns by tolerating more risk. Further, Hirshleifer et al.(2006) stated that when share prices affect fundamentals by influencing corporate investment, irrational investors can earn higher level of profit than rational investors. Haugen (1999) also argues that rational efficient market is not in agreement with the empirical findings on abnormal stock returns for stocks with higher current earnings yields, high book-to-price ratios, short-term price momentum and long-term reversal and excessive price volatility.

In real circumstances, investor's behaviours may tend to deviate from the concept of complete rationality when uncertainty and risk or incomplete information regarding an alternative or higher level of complexity is introduced. Investors tend to deviate from rationality owing to various constraints and due to the impact of psychological and other factors. This situation leads to the formation of another concept, which is called as bounded rationality. Bounded rationality relates to cognitive restrictions on decision-making and it is based on the argument that people have limited decision making capabilities (Simon, 1957). Decision makers are viewed as satisfiers rather than optimizers. Decision makers seek a satisfying solution instead of an optimal solution (March, 1994). Rubinstein (2001) called this situation as the minimal rationality. According to Simon (1997) bounded rationality is the central theme in the behavioral approach, which explains the ways in which the actual decision-making process influences the investment decisions made by investors. However, the term bounded rationality does not mean irrationality. In other words, it implies that investors, in general, are bounded rational, but not necessarily irrational. Further, Conlisk (1996) mentioned that since the limitations on human cognition must be considered as a scarce resource and the concept of bounded rationality have been successfully incorporated by many economists into their models for explaining investment and market behaviors. Thus, bounded rationality theme could be incorporated into financial decision making.

7. Rationality in Behavioural Finance

Behavioral finance is a new developing science that illustrates the irrational behavior of investors. Statman,(1995) indicated that the limitations of the traditional finance leads to emergence of behavioural finance. According to the various studies conducted from 1970s, researchers provided more emphasis for psychology since it is the basis of irrationality and it leads to the foundation of behavioral finance. Barberis and Thaler (2003) mentioned that

behavioural finance elucidates investor irrationality and the investment decision making process on the basis of cognitive psychology and biases related with investors' beliefs. Behavioral finance combines psychology with traditional finance theories and provides better elucidations for irrational financial decision making by investors (Shefrin, 2002). Similarly, according to Olsen (1998) it attempts to improve investment decision-making by applying psychological and economic theories. Statman (1999) indicated that behavioral finance tries to identify and to explain the impact of cognitive errors and emotions on financial decision making. Linter, (1998) described behavioural finance as a study of how people understand and react on information for the purpose of making investment decisions. In general, there are two primary constituents in the behavioral finance literature. The first one is identification of anomalies in the Efficient Market Hypothesis (DeBondt and Thaler, 1985) and the second element is the detection of investor behaviors or biases which are not in agreement with the classical economic and financial theories of rational behavior (Odean, 1999). Behavioral finance challenges the Efficient Market Hypothesis and focuses upon how investors interpret and act upon information generously available to them. Etzioni (2014) mentioned that behavioral economics lends a hand in understanding investor behavior and intellectual capabilities as they have many cognitive biases which restrict their intellectual capabilities. Daniel et al. (1998), Daniel and Titman (1999) and Barberis and Shleifer (2003) studied various trading anomalies such as overreaction, under-reaction, herding behaviour and momentum strategies and indicated that these anomalies infringe the trading rules of the Efficient Market Hypothesis and make the models and theories of traditional finance unsuitable in relating investment risk and returns. Behavioural finance attempts to clarify why and how markets might be inefficient. In short, behavioral finance advances economic understanding by incorporating the behavioural aspects of human nature into financial models and theories. It offers better understanding on the investors' behavior and actual market practices.

According to Shefrin (2002), there are three major themes in behavioural finance such as heuristics, framing and market inefficiencies. Heuristics means investors often make investment decisions on the basis of rules of thumb without following rational investigations and analyses. Since people have limited memory span, information processing capability and computational skill to solve complex issues and problems, and the cognitive load required for complex problems exceeds people's cognitive capacities (Simon, 1955, 1957; Arthur, 1994; Conlisk, 1996), they tend to follow simplifying rules-of-thumb or heuristics to solve such multifaceted problems and it may cause irrational behaviour and poor investment decisions. (Simon, 1955; Kahneman and Tversky, 1974; Gabaix and Laibson, 2000). Framing means the way in which a problem or situation presented to people will have an effect on the decision. Finally, market inefficiencies aims to explain studied market outcomes which are not in agreement with rational expectations and market efficiency. As a whole, all of these aspects include non-rational decision making, mispricing and return anomalies. Kahneman and Tversky are one of the pioneers of the field of behavioural finance and the Prospect theory was introduced by them in 1979. In this theory they established that individual investors perform differently than selecting optimal investment decisions. According to Prospect theory investors assign more weight to outcomes that are more certain and provide less weight to outcomes that are merely probable and they allocate more value to gains and losses as compared to the final asset. Kahneman and Tversky (1979) found that when people make investment decisions they often they act as risk seekers and investors tend to interpret outcomes of various decisions in different manner. In short, prospect

theory states that psychological factors of investors play a key role in driving their actual decision making process to deviate from the concept of rationality.

Lin (2012) argued that behavioral biases play a major role in investment decision making process of investors. Waweru, Mwangi & Parkinson (2008) indicated that a number of behavioural factors influence the decision making pattern of the individual investors. Similarly, Kim & Nofsinger (2008) found an apparent impact of behavioral biases on investment decisions as a result of irrational behavior of Japanese investors. They also stated that due to this irrational behaviour, investors make poor investment decisions. Barber and Odean (1999) argued that investors fail to reach optimal judgment and decision making. Kahneman and Riepe (1998) also indicated that investors' deviations from the idea of rationality are pervasive and methodical.

A large number of researches in the field of behavioural finance reveal that individual investors make investment decisions in a manner that is in contrast to the traditional finance theories due to various behavioural biases. Investors tend to be overconfident (Daniel, Hirshleifer & Subrahmanyam, 1998; Odean, 1999; Barber and Odean, 2000; Barber and Odean, 2001; Ritter, 2003; Allen and Evans, 2005; Evans, 2006), risk averse (Odean, 1999; Statman, 1999; Fogel and Berry, 2006), loss averse (Kahneman and Tversky, 1979; Kahneman, Knetsch, & Thaler, 1990; Odean, 1998; Shiller, 2000; Barberis and Huang 2001) and hold under diversified investments (Blume and Friend, 1975; Benartzi and Thaler, 2001). They also exhibit anchoring bias (Kahneman and Riepe, 1998; Shiller, 1998; Evans, 2002), availability bias (Kahneman and Tversky, 1973), representativeness bias (Kahneman and Tversky, 1974; Debondt and Thaler, 1985) and the bias of mental accounting (Thaler, 1985 and Shiller, 2000; Barberis & Huang 2001; Barberis and Thaler, 2003; Ritter, 2003). Herding bias also arises when some investors follow the actions and decisions of others and pay no attention to their own information for investment decision making (Allsopp and Hey, 2000). Asch (1956) mentioned that investors believe that majority cannot be erroneous and due to this reason they imitate the actions of others. In addition, interpersonal communications, recommendations of others and social interactions also affect the trade behavior of the investors (Shiller and Pound, 1989; Shiller, 1990; Oberlechner and Hocking 2004).

Lin (2011) made an attempt to identify the relationship between rational decision making process and behavioral biases and concluded that identifying investment demand, searching for information and evaluating the alternatives are the major steps in the decision making process and both stages of demand identification and evaluating alternatives are significantly and positively associated with overconfidence. In addition, the stage of evaluating alternatives is directly and simultaneously related to both biases of overconfidence and disposition effect. Hassan, Shahzeb, Shaheen, Abbas, Hameed & Hunjra (2013) concluded that disposition effect, herding and overconfidence are the major behavioral biases among the investors in Pakistan. Rekik and Boujelbene (2013) found that Tunisian investors do not always act rationally in their investment activities and anchoring, herding attitude, representativeness, loss aversion, and mental accounting biases affect the investment decision making processes of them. Similarly Hirshleifer and Shumway (2003) and Kamstra, Kramer, & Levi (2003) stated that investors do not act rationally and their moods have an impact on their decisions. Statman (1988) concluded that that people trade for both cognitive and emotional reasons. Individual investors show fear on unknown that give rise to familiarity bias in terms of investing in domestic securities (French and

Poterba, 1991; Coval and Moskowitz, 1999; Huberman, 2001; Frieder and Subrahmanyam, 2005). Similarly, Grinblatt and Keloharju (2001) found that Finnish investors exhibit much preference to hold stock in firms which are located close to them.

8. Conclusion

The term rationality implies that people should be able to obtain the entire relevant information, to analyse the information by using appropriate methods and techniques, to make a final decision based on the results of the analysis and to make necessary adjustments in a situation of arrival of new information. A rational investor is a person with full of information about the all possible investment avenues available to him and their risk and return characteristics and other features, he should be able to evaluate those investment avenues mainly based on their risk and return trade off by using various models of finance and able to make the optimum investment decision purely based on his objective in an error free and bias less manner. In short, rationality relates with principles of maximization, self-interest and consistent choice. Traditional finance has always believed that investors as fully rational decision makers.

However, the concept of perfect rationality primarily assumes that investors are able to obtain the entire information and it may be applicable in the case of a part of the investors in the well developed countries. The most of the investors in the less developed countries face various constraints and difficulties in getting the entire information. Even though the development in the information and communication technology facilitates the flow of information to all directions of the world, a part of the people don't have access to the information technology based tools. In addition, in most of the country's financial reports, business and financial magazines and journals are published in international languages such as English and not in their mother tongue. Particularly the most of the companies publish their annual reports in English only and in this situation the investors with lack of English language skill face difficulties in obtaining financial information which are essential for their investment decision making. In addition, the cost of certain information also plays a key role in this regard.

In addition, in the real situation of many countries, investors face various difficulties and constraints in reaching the ideal position of complete rationality due to lower level of financial literacy among the investors. In the earlier stage of the investment decision making process, investors should determine their own investment objectives clearly and for that purpose they should have clear understandings on the investment related concepts. However, due to the lack of knowledge on investment related concepts they are unable to set sound investment objectives for their investment programs. This fundamental mistake brings the entire investment process in a wrong direction. In addition, a rational decision maker should be aware of full list of alternatives to solve a problem. Thus a rational investor should have the comprehensive list of investment alternatives or financial assets available to him and their unique features in order to select the optimum one. However, the most of the investors in the developing and less developed countries don't know the entire investment opportunities available to them. In particular, in these countries due to this reason their participation in the share market and Government debt securities market is very low. They have little or no knowledge about share market and Government debt securities markets and the investment procedures and methods to be followed in these markets. In some

countries the share market operations are still in the infant level. This situation leads investors to hold less diversified portfolio also.

Further, rational investors are investors who make optimum investment decision based on the information available to them. For the purpose of arriving at an optimum decision they should be able to evaluate various possible investment opportunities or alternatives in the background of information available to them. Thus investors should have the ability to understand and analyze the information available to them. But due to the lower level of financial literacy a considerable proportion of the investors are unable to understand the correct meanings of the financial terms such as return, yield, risk, fundamental value of assets, diversification and so on, to calculate or decide the expected return, fundamental value of financial assets and risk of investment alternatives and to arrive at correct inferences for the information available to them. There are some investors who face difficulties in understanding financial reports of companies.

The socio and cultural factors also create barriers in achieving complete rationality. In a rational decision making process, the decision maker should arrive at an optimum decision by analyzing the available information in an unbiased manner. However, various studies proved that male and young investors exhibit more risk preference than female and old investors. In addition, various religious factors also influence on the investment decision making process and make barriers in selecting optimum decision.

In some countries people provide more emphasis for their professions and saving, but not investment. These people believe that their profession is the only way to earn wealth and save a considerable portion of their current income from their professions. However, they fail to invest the saved money in optimum investment opportunities. They don't provide proper importance and to allocate time for analyzing various investment alternatives and selecting the optimum investment alternative. The most of them invest their saved money in bank fixed deposit schemes, normally which offer lower return. In the most of the South Asian countries, it is the common tendency.

In this background, over the past few decades, behavioral finance researchers have proven that investors fail to act rationally or evaluate the entire available information in their decision making process. A large number of studies in the late 1970s and early 1980s studied various anomalies in this area. However from the 1990s researchers provided more interest on investor psychology. Investors exhibit various behavioral biases that produce systematic errors in the way they process information in order to make an investment decisions. Behavioral finance has provided valuable contribution in explaining real behaviors of investors and actual market practices.

A clear distinction between traditional finance and behavioral finance could be observed based on investor's rationality. The ideas of complete knowledge and optimization on the part of individual investors are rejected by the behavioral assumption of bounded rationality. Bounded rationality is the core theme in the behavioral finance, which explains the ways in which the actual decision making process affects the investment decisions. However, bounded rationality does not mean the complete irrationality. According to the researchers in behavioral finance investors are unable to exhibit complete rationality mainly due to psychological factors. The

introduction of the idea of bounded rationality has played a major role in changing the direction of the path in which the field of finance moved. There was a fundamental shift from the believes on the investor's decision making attributes of optimization based on perfect knowledge to satisfying behaviour based on the imperfect knowledge. The traditional mathematical models based investment decision making approaches are forced to incorporate behavioural aspects. The assumption of perfect rationality of traditional finance states that the weaknesses in investment decision making arise due to external environmental factors, whereas, according to the concept of bounded rationality they arise because of the cognitive limitations of individual investors. In the real world situation, due to limited capacity of investors, they are unable to obtain and optimally analyze all relevant information and face cruel difficulties in solving complex problems and issues. In addition investors face difficulties in compiling a comprehensive list of alternative courses of actions and determining and assigning the values and probabilities of each alternative courses of actions. Due to these aspects they are forced to rely on heuristics and in some circumstances these heuristics result in optimal decisions and performance, but not in all situations. Therefore it may be concluded that bounded rationality view interprets the investors behaviour in a more appropriate and realistic manner and investment decision making should be approached based on this view.

As a whole traditional finance and behavioral finance support investors to improve the quality of their investment decisions and performance. The development of behavioral finance theories can't diminish the importance of the contributions of traditional finance. But behavioral finance attempts to complete the behaviorally incomplete theories and models of traditional finance. The introduction of psychology into traditional finance concepts helps to understand the behaviors of investors and investment decision making patterns. Standard finance theories and models can be used to present more reliable and accurate explanation of the evolving markets manifestations, by understanding the human behavior, attitudes of investors, psychological processes and investment decision making practices. Since standard finance and behavioral finance treat the concept of rationality in different manner, they presented different approaches for investment. Therefore the concept of rationality can be considered as the central point between standard finance and behavioral finance. However, understanding and knowledge in the role of rationality in investor behaviour and investment decision making process remain incomplete and thus, there are many future research opportunities in this regard.

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