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**DECISION-MAKING IN THE STOCK MARKET: INCORPORATING
PSYCHOLOGY WITH FINANCE**

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Abstract

Objective: *The decision-making by individual investors is usually based on their age, education, income, investment portfolio, and other demographic factors. The impact of behavioural aspect of investing is, however, often ignored. The objective of this paper is to explore the impact of behavioural factors and investor's psychology on their decision-making, and to examine the relationship between investor's attitude towards risk and behavioural decision-making.*

Methodology: *The research uses the literature relevant to behavioural decision-making and investor's psychology. The research is based on the secondary data relating to investments, finance, and economics available on the Internet, previous publications of the author, and some other publications as well. The information is then integrated in order to understand the interrelationships of investor's perception of risk, behavioural factors, and decision-making in the Indian context.*

Major findings: *Through this research, the author finds that unlike the classical finance theory suggests, individual investors do not always make rational investment decisions. Their investment decision-making is influenced, to a great extent, by behavioural factors like greed and fear, cognitive dissonance, heuristics, mental accounting, and anchoring. These behavioural factors must be taken into account as risk factors while making investment decisions.*

Implications: *Investment advisors and finance professionals must incorporate behavioural issues as risk factors in order to formulate effective investment strategies for individual investors.*

Value: *With an objective to create investor's confidence in the Stock market, behavioural issues are the newest of the things which must be considered while formulating investment strategies. This research will help investment advisors and finance professionals judge investor's attitude towards risk in a better way, thus leading to better investment decision-making.*

Key words: *Behavioural Finance, Asset Allocation, Cognitive Dissonance, Rationality.*

INTRODUCTION

Decision-making is a complex process which includes analysis of several factors and following various steps. It is believed that decision-making is based on primarily two things: personal resources or factors, and technical factors. Similarly, while making decisions in stock market, investors tend to rely on these two factors. Decision making by individual investors is usually based on their personal factors such as age, education, income, and investment portfolio, etc. Simultaneously, their investment decisions are also derived from complex models of finance. These models include those based on expected risk and return associated with an investment, and risk-based asset pricing models like CAPM (Capital Asset Pricing Model). But decisions should never be made only by relying on the personal resources and complex models, which do not consider the situational factors. Situational factors are extended not only to the problem faced by the decision maker, but also to the environment. So, in order to make appropriate decision, one needs to analyse the variables of the problem by mediating them applying cognitive psychology. Decision making can be defined as the process of choosing a particular alternative from a number of alternatives. It is an activity that follows after proper evaluation of all the alternatives. Hence, decision makers need to keep themselves up-to-date by obtaining information/knowledge from diversified fields so that they can accomplish the tasks they have to work upon.

Effective decision-making in stock market requires better insight, and understanding of human nature in a global perspective, apart from sharp financial skills and ability to gain best out of investments. Positive vision, foresight, perseverance and drive are must for an investor to be successful in his investment decisions. Investors differ in characteristics due to demographic factors such as socio-economic background, educational level, age, gender, and alike. So, it is

difficult for an investor to make an appropriate investment decision on the basis of the decisions made by someone else. It implies that an investment decision optimum for one investor may not be suitable for the other investor. Every investor has his own investment objectives, risk tolerance level, inflows and outflows of money, and other constraints. And accordingly, he designs his investment portfolio considering all these factors. Institutional investors have to estimate the output mean-variance optimization as well. But when it comes to make investment decisions by individual investors, they fail to follow the standard procedure for designing an optimum investment strategy. They are said to be suffering from behavioural biases. Psychological biases may affect their investment decision-making process. The impact of behavioural factors on decision-making is often ignored by individual investors, and this hampers the performance of their investment in stock market. The study of the impact of behavioural aspect of investing is, therefore, the need of the hour.

Behavioural finance is the study of investors' psychology while making financial decisions. It applies scientific research on human and social cognitive and emotional biases to better understand economic decisions and how they affect market prices, returns, and allocation of resources. Behavioural finance is primarily concerned with the rationality, or lack thereof, of economic agents. Investors fall prey to their own and sometimes others' mistakes due to the use of emotions in financial decision-making. Behavioural finance tries to understand how people forget fundamentals and make investment decisions based on sentiments and emotions.

Behavioural finance should be seen as an integral part of decision-making process, since it directly affects investors' decisions and subsequently their performance. Once they are able to

identify these psychological biases and mental errors relating to decision-making process, they can perform better in their investments. Understanding these issues will help investors in general, individual investors in particular, to design an optimum investment strategy and attain their investment goals. The objective of the present study is to identify the behavioural factors, and explore their impact on an investor's decision-making. This analytical study also aims at examining the relationship between investor's attitude towards risk and behavioural decision-making process. The present paper will also endeavour to find out how to reduce or eliminate the behavioural biases affecting investment decision-making process.

BEHAVIOURAL FINANCE: WHERE FINANCE MEETS PSYCHOLOGY

In traditional theories of finance, investment decisions are based on the assumption that investors are rational human beings and hence they can make rational investment decisions. In the center of finance are investment decision models based on expected return and risk associated with an investment, and decisions using risk-based asset pricing model like CAPM (Capital Asset Pricing Model) and other similar frameworks. All these along with some other theoretical models are derived from investor rationality. Investor rationality can be defined as their being reasonable and making decisions that are in their best interest. Although these approaches are some of the most widely used practices among finance professionals, these approaches suffer from some limitations. For example, these theories lay emphasis on the benefits of portfolio diversification, but very few individual investors hold so many stocks in their portfolio.

It can be said that traditional theories of finance have a restricted role in understanding some important issues relating to investment decision-making such as (i) why do individual investors make trading decisions, (ii) what does actually affect their performance, (iii) how do they make their portfolio decisions, and (iv) why do returns vary across stocks for reasons other than risk. Apart from that traditional finance does not address issues like what mistakes to avoid while investing, and what strategies in financial markets are likely to work in terms of earning supernormal returns. Those are the major objectives of behavioural finance which allows for explanations of financial phenomena based on non-rational behaviour among individual investors.

Investors put their money in stock markets to earn returns. They always try to beat the market and make riches by investing in stocks. It is assumed that investors always act in a rational manner. It means they behave in a manner that their returns rationally. The central proposition of finance theories, the Efficient Market Hypothesis (EMH) is based on this very assumption. But it has been observed and even proved that individuals are ruled as much by emotion as by cold logic and selfishness. While the emotions such as greed and fear often play an important role in bad investment decisions, there are other causes like cognitive biases, heuristics (all drawn from psychology) that make investors incorrectly analyse new information about an investment and thus overreact or under react. Behavioural finance is the study of how these mental errors and emotions can cause stocks to be overvalued or undervalued, and to create sound investment strategies that give winning edge over the other investors.

Traditional finance theories offer investment strategies on the basis of risk-return evaluation. But an investor must keep in mind that risk is associated not only with the prices of and returns from an investment, but also it lurks inside an investor's mind. It can be reflected in the way an investor (mis)interpret information, fool themselves by thinking he is smarter than others, and overreact to market swings. Any information misinterpreted is of no use and it can let investor's emotions sway his judgments. Human beings are irrational about investing. Correct and rational behaviour patterns are absolutely essential to become successful in stock market; it is also a prerequisite to be financial successful and for this one has to overcome these tendencies. Behavioural finance combines the disciplines of economics and psychology specifically to study this phenomenon and help an investor adopt optimum investment strategies avoiding psychological errors.

Though a comprehensive literature review about behavioural finance in general is beyond the limitations of the author as well as the scope of this paper, the author has tried to incorporate the highlights of some well-known empirical studies regarding investor's psychological biases and their impact on investor's decision-making. A number of psychological biases that affect investor's behaviour and subsequently decision-making have been dealt with in several previous studies across the world. Such a list of biases include overconfidence, anchoring, heuristics, cognitive dissonance, home bias, sensation seeking attitude, competence effect, herding, etc. The author, in the present analytical study, attempt to address some of these factors that influence investor's decision-making to a large extent.

Many finance scholars have, for long, considered that psychology plays a key role in determining the behaviour of markets. However, it is only in recent times that a series of concerted formal studies have been undertaken in this area. One of the earlier studies regarding decision making under uncertainty was conducted by Kahneman and Tversky (1974). This study reveals three heuristics that are employed in making judgments under uncertainty: representativeness, availability, and anchoring. We will discuss these in the later part of this paper. Perhaps the most important work in the development of behavioural finance and behavioural economics fields was done by Amos Tversky and Daniel Kahneman in 1979. The paper 'Prospect Theory: An Analysis of Decision Making under Risk' used cognitive psychological techniques to explain a number of documented anomalies in economic decision making (Kahneman and Tversky, 1979).

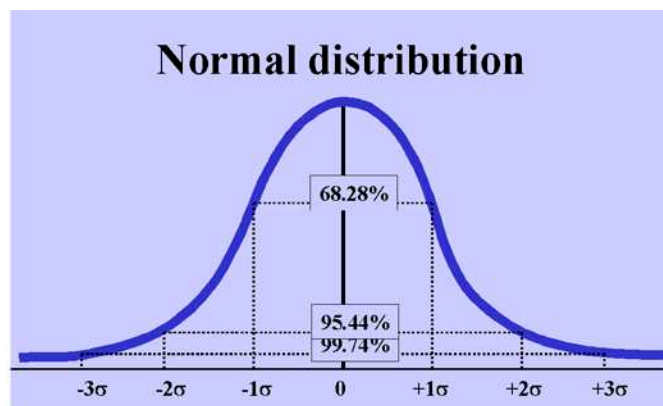
INVESTOR'S RISK PERCEPTION

Each and every investor is different from the other. They perceive risk differently. The variance of portfolio returns are generally said to be the most important risk measure, used in the risk-return trade-off. On the other hand, in the common perception risk is mostly related to the possibility and magnitude of negative deviations from the pre-set benchmark. Veld and Merkolova (2007) in their study of individual investor's risk perception revealed that individual investors use a variety of risk measures at the same time. They tried to test which risk measures influence the individual investors' decision-making. The variance is one of the risk measures, but besides the variance, investors also use several measures of shortfall risk. In particular, semi-variance of returns is found to reflect the investors' risk perceptions most often.

Kiefer (1999) went on to define some of the most popular client perceptions of risk which are equally applicable to all types of investors, be it individuals or institutional ones.

Volatility – It is the dispersion around the mean using for example standard deviation. It refers to the uncertainty of getting certain returns over the entire investment period.

Figure-1: Standard Deviation as Volatility



Referring to figure 1, when risk is defined in terms of standard deviation (at 95% confidence level):

- 68.28% of returns fall within 1σ of the mean,
- 95.44% of returns fall within 2σ of the mean, and
- 99.74% of returns fall within 3σ of the mean.

It can also be interpreted from the individual investor's point of view that returns lower than the minimal acceptable return (MAR) are perceived as risk, and returns higher than the MAR are perceived as reward by the investors (figure 2):

Figure-2: Risk Perception



Capital Loss – A number of investors perceive risk as risk of losing capital or a decrease in the value of their portfolio.

Regret – Another risk perceived by investors is that of regret. Regret is strong emotional situation related to an information about the past regarding a decision in the past leading to a worse result than an alternative decision of someone else. The opposite of regret in positive sense is gratification. The joy of gratification and the pain of regret are important. Kahneman and Tversky define regret as the frustration which occurs as a consequence of a bad choice (Statman, 1999). There may be following situations before an investor relating to regret:

- Selling an asset too soon and asset price keeps on increasing after a sale,
- Buying an asset too late and asset value falls after purchase, and

- Increase in the value of assets previously owned.

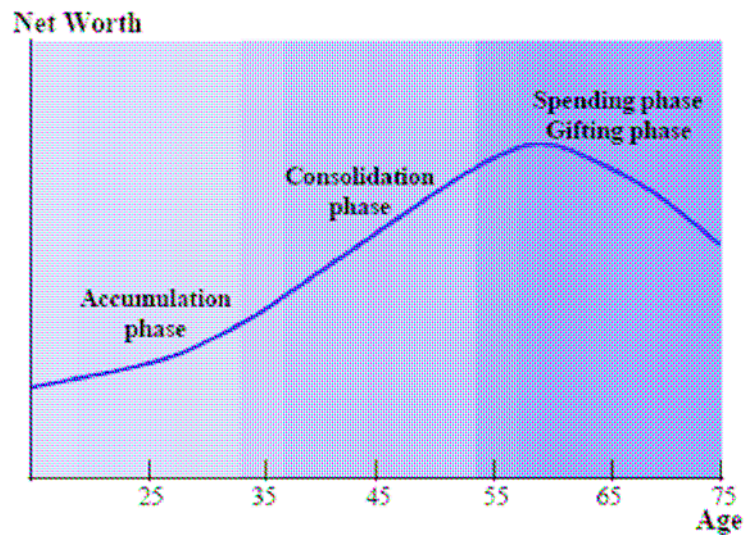
Cash flow – investors might need cash flow from investment in terms of interest or dividends to meet their personal needs. Cash flow from investment might be lower because of company profitability affecting dividends, or decreasing interest levels affecting interest received from the investment. This may also be perceived as risk by investors.

Goal shortfall – Every investor has his/her own investment goals to be attained through the investments. These goals may be of short-term, medium-term, or long-term. Investor may not be able to attain his/her goal despite cash flow/returns being positive. This is another category of risk for an investor.

Performance risk – There is much likelihood that the investment may not repeat the same performance as it did in the past. Most of the investors buy assets and make investment decisions based on the past performance, and they get disappointed if the absolute performance is not as good as in the past. Such uncertainty is referred to as performance risk associated with that investment.

Let's get some insights about individual investor's monetary life cycle. It will help us understand his psychology regarding his investment decisions better. It will also help us explore how risk perception of individuals changes through different stages of their life cycle. During his entire life cycle, the investor's spending and savings patterns can be broken into three phases termed as **Accumulation, Consolidation & Spending** (figure 3).

Figure-3: Investor's Life Cycle



- (i) *Accumulation Phase*: associated with early years of an investor's life. In this phase, his net worth is usually small when compared to his liabilities. He can be willing to take high risks to secure high returns.

- (ii) *Consolidation Phase*: This phase occurs in mid to late career stage and investor's income during this phase usually exceeds his expenses. Here, he will be wishing to balance the growth and risk of his portfolio.

- (iii) *Spending Phase*: During this phase, the investor becomes financially independent. He covers his living expenses from his accumulated assets rather than earned income. In most of the cases, the investor need not work in order to support his life style. He is reluctant to take more risk and he wants his investment portfolio

restructured to generate sufficient income and growth in order to meet his personal needs.

Each phase of the investor's life cycle plays a vital role in choosing a suitable investment product and determining an appropriate investment strategy, depending on his needs, objectives, and constraints. For example, a young man of 25 may wish to save a sufficient amount of money to meet a long-term goal of retiring at the age of 65, but at the same time, he may also have short-term goals such as saving for the purchase of a house or paying for a car.

DECISION-MAKING FOR INVESTMENT

Decision-making under risk is directly associated with the decision maker's (Investors in our case) attitudes towards risk. He makes investment decisions on the basis of his appetite for risk and return. The outcome of a decision results in either gain or loss based on a particular combination of strategy and state of nature prevailing at that time. The investor as decision maker has no control over the states of nature that will prevail in future but the future states of nature will certainly affect the outcome of any strategy that an investor may adopt. The particular decision made will depend, therefore, on the decision maker's knowledge or estimation of how a particular future state of nature will affect the outcome of each particular strategy. We will have a close look on factors affecting decision-making process.

(a) Classical Decision-Making

The traditional finance theory suggests that investors as decision makers are rational. They make rational investment decisions. Tversky (1990) proposes that classical decision making under risk and uncertainty incorporates three assumptions, namely, asset integration, risk aversion, and rational expectation.

Asset integration: Individual investors tend to choose between risky prospects by comparing the distributions resulting from integrating these prospects with rest of their assets. In other word, an investor prefers an investment in any asset, say X, out of his asset portion, say W, to that in another asset, say Y, only if $W+X$ is preferred to $W+Y$.

Risk aversion: A *risk-averse* investor is one who when given a choice between more or less risky investments, with identical expected money returns; he will select the less risky investment. Investors usually prefer the least spread of variance, if expected return is supposed to be held constant. People always prefer a sure outcome rather than a risky prospect with the same expected values.

Rational expectations: This assumption implies that investors are coherent, accurate, and unbiased forecasters. All their expectations are supposed to be rational and assumed to properly reflect all relevant information publicly available.

Since investors are assumed to be rational and risk averse under classical decision-making theory, they are supposed to be choose a portfolio that minimises risk. This very portfolio is referred to as an optimal portfolio lying on the efficient frontier. But in actual

scenario, things are totally different from those mentioned under the classical decision-making theory. The Classical decision theory talks about efficiency of the markets and people making rational decisions to maximize their profits. It assumes that markets are efficient and no one can take advantage of its movements. It also assumes that humans are rational beings and will act to maximize their gains. However, behavioural theorists believe that the markets are inefficient and human beings are not rational beings.

(b) Behavioural Decision-Making

Unlike traditional theories of finance, modern theory suggests that investors' decision-making is not driven by due considerations and are often inconsistent. In other words, investors are not completely rational while making investment decisions. Their decision-making process is subject to several cognitive and psychological errors. Investors must try to acquire a clear picture of the cognitive and emotional errors to which they are vulnerable. This is what Herbert Simon has called "bounded rationality" (Tversky, 1990). Tversky found that (i) in contrast to the assumption of the risk averse investor, people often exhibit risk seeking behaviour while making investment decisions; (ii) investors tend to attribute outcomes of various decisions differently; and (iii) their expectation, which are said to be rational ones under the classical decision making, are often biased in predictable directions.

A comprehensive study of literature relevant to behavioural decision-making and individual investor's psychology available gives a fair idea of the cognitive and emotional biases

to which an individual investor's decision may be susceptible. In this paper the author's endeavour is to discuss those biases with regard to investment decision making.

Heuristics: Heuristics, which expresses that individuals have a tendency to make judgments quickly, are simplifying strategies used to approach complex problems and limit explanatory information. Individual investors tend to take decisions usually by trial and error method, thus developing rules of thumb. To put it simply, investors use rules of thumb in order to process complex information so as to make investment decisions. It may be possible that investors have obtained appropriate information and evaluate all these in an objective manner, but it is very difficult to separate oneself from emotional and cognitive errors involved in each and every step undertaken by the investor. Sometimes it may lead to a favourable decision, but many a times it may result in unfavourable and poor decision outcomes. The list of heuristics includes:

- (i) *Representativeness Heuristics:* Investors tend to assess the likelihood of an event in the stock market by its similarity to other events. Such a biased assessment may result in overreaction on the investor's part. Say for example, if an investor finds that a leading fund or brokerage firm or an eminent personality has invested in a particular stock, they also buy the same stock without being objective. Similarly, if an industry leader reports impressive results then other players in that industry also benefit. Such heuristics result in investor's action of replicating their portfolio by following the others blindly.

(ii) *Overconfidence*: Though confidence is, to much extent, viewed as key to success, it is not always in the interests of investors. In the stock market, investor's confidence often results in excessive trading. Odean (1998) attributes the high volume of trading to investors' overconfidence. Overconfidence can be known as the investor's tendency to perceive himself as skilful. They forget the concept of "a rising tide lifts all the boats" at the time when their investment decisions prove to be good. They tend to overestimate their own capabilities. Glaser and Weber (2003) argue that there are three aspects of overconfidence, namely miscalibration, the "better-than-average" effect (i.e., people tend to think that they have higher than average skills), and illusion-of-control (i.e., the tendency to believe that one's personal probability to success is higher than objective probability would warrant). They establish that all but miscalibration lead to higher trading activities.

(iii) *Availability Heuristics*: Availability based heuristics indicates that investors are inclined to give higher probabilities to events which they are familiar with. This is associated with the ease of recall. Individuals are most likely to make judgments based on recent or easy to remember events rather than other similar but harder to recall occurrences. In the bullish stock markets, there is only positive news; and in bear markets it is only negative. We have seen recently that in January 2008 when the Sensex was over 20,000 everything was painted as rosy; rupee was on record high; FII was on its peak; on the contrary, October 2008 saw an unprecedented turmoil in

the financial arena across the globe and the Sensex is on the ground. Thus, it can be said that stock markets go up or come down on reflexivity.

Regret Aversion: Regret is the frustration which occurs as a consequence of a bad choice. Regret in investment context, refers to investor's emotional reaction at making a mistake. As discussed earlier, the joy of gratification and the pain of regret is important to understand the behavioural impact on investment decisions. The desire for gratification and aversion of regret result in the realization of profits and retardation of losses. This situation holds true for the small investors particularly. Investors when faced with the fact that they have made a mistake, tend to avoid selling the stocks that have decreased in value, and often sell the stocks that have increased in value promptly. By doing so investors are not supposed to admit their mistake and feel regret, or to prevent feeling regret at hanging on to a share and seeing prices decline.

Cognitive Dissonance: Cognitive Dissonance¹ refers to the psychological conflict resulting from incongruous beliefs and attitudes held simultaneously. The concept was introduced by the psychologist **Leon Festinger** (1919–89) in the late 1950s. He and later researchers showed that, when confronted with challenging new information, most people seek to preserve their current understanding of the world by rejecting, explaining away, or avoiding the new information or by convincing themselves that no conflict really exists. Cognitive dissonance is nonetheless considered an explanation for attitude change. In other words, it is the mental conflict that investors experience when they realize that they have made a mistake.

With regard to investment decisions, cognitive dissonance can be regarded as the pain of regret stemming from wrong beliefs. Individual investors often do not want to change their decisions, they convince themselves that their decision was rational. Kumar and Chandra (2007) studied individual investors' sentiments and found that most of them wanted to sell the group of stocks that yielded profit, and thereby would like to maintain their belief that their decision of holding the group of stock yielding loss was right. It is common to observe this approach in individual investor behaviour in financial markets.

Anchoring: Investors often fail to do enough research because there is simply too much data to collect and analyse. Instead, they take action based on a single fact or figure that should have little or no bearing on their decision, while ignoring more important information. Psychologists call this irrational behaviour “*anchoring*”. When asked to define a quantum, such as earning expectations for a stock, investors tend to ‘anchor’ on the most recent information (Hoguet, 2005). This causes investors to under react to new information. Say for example, financial analysts become anchored to their forecasts and often under react to new information when making revisions.

The point of anchoring by investors may be any of the follows:

- (i) *Anchoring on Purchase Price:* when they stick to their purchase price and fail to make any decision;
- (ii) *Anchoring on Historical Price:* investors refuse to buy a stock today because it was cheaper last year or refuse to sell any asset because it was higher in the past;

(iii) *Anchoring on Historical Perception*: when investor anchor on their past perception about the company, for example, an investor does not want to invest in ITC stocks, just because it was a tobacco-products manufacturing company in the past;

Fischer and Gerhardt (2007) find that the theoretical recommendation to treat winning and losing assets equally and focus only on future developments is not followed either. There is a tendency to sell winning stocks too early and keep losing stocks too long. This so called *disposition effect* was introduced by Shefrin and Statman as a combination to two cognitive errors: loss aversion and anchoring. Thus, anchoring is one of the mental errors that affect investors' decision making to a large extent.

Mental Accounting: Shiller (1997) suggests that investors place their investments into arbitrarily separate mental compartments, and react separately and in different ways to the investment based on which compartment they are in. In Indian context, we often see that people save for some specific purpose, say for children's higher education, and then borrow money to some other purpose, say buy a car, even though the interest on the borrowed fund is higher than the interest rate they get on their savings for their children's education.

Thaler (1999) notes that mental accounting includes three components. The first compartment of mental accounting captures how outcomes are perceived and experienced, and then how decisions are made and subsequently evaluated. The second part of mental accounting assigns the activities to specific accounts. It keeps track of inflow and outflow of funds from each specific activity. The third component is concerned with the frequency with which account are evaluated. Accounts can be balanced on a daily, weekly, monthly, or yearly basis. Each of

the components of mental accounting violates the economic principle of fungibility. Consequently, decision choices are influenced.

Mental accounting affects not only the personal finances but is a common phenomenon in the complex world of investment. When an investor buys a new stock, he starts maintaining a new virtual account for this stock in his mind. Each decision, action, and outcome about that stock is placed in that account. So has each investment of its own. Once an outcome is assigned a mental account, it is difficult to view that outcome in another way. When interactions among assets in different accounts are overlooked, this mental process can adversely affect investor wealth.

Ignoring interaction among mental accounts can adversely affect investment decisions. Modern portfolio theory shows how the combination of different assets in a portfolio of securities can reduce the volatility that comes with investing in any single security. If one class of securities, say utility stocks, tend to fall when another group of equities, say oil stocks, tend to rise, the volatility or risk of the investor's portfolio can be reduced by combining such assets into a single portfolio. Utility stocks get hit when oil prices rise because such companies are often unable to quickly recoup the cost of rising fuel prices. At the same time, rising oil prices tend to boost the profits and share prices of oil companies. If investors want to profit from rising oil prices, they buy oil stocks and avoid heavy energy users, such as public utilities. If investors want to avoid betting on trends in the price of oil altogether, they might construct an investment portfolio that includes well-managed public utilities and oil companies. Any time an investor contemplates buying or selling a given security, it is how returns on that security interact with

returns on the investor's overall portfolio that matters. Unfortunately, investors sometimes encounter difficulty evaluating interactions among various securities because of mental accounting errors.

It is commonly observed that investors hold on to losing investments. They tend to justify their such decisions by offering various reasons, but it is a fact that they are mentally not willing to accept their making a loss. Investors tend to believe that they book a loss only when they sell. So, they fall prey and hold on to the losing investment in the hope that it will recover. This is a great mental accounting error among individual investor fraternity. Mental accounting, like anything else, also has its positive and negative aspects and it is up to each individual to know what is favorable to his financial interests

Greed and Fear: Renowned investor Warren Buffet remarked in the 1986 Berkshire Hathway Annual Report: “we only attempt to be fearful when others are greedy and greedy when others are fearful” (Heller, 2000). The greed and fear on the part of individual investors play an important part of their decision-making. Their greed to earn riches in a very short span of time prompts them to trade excessively; similarly, their fear, sometimes baseless, leads them take decisions regarding buy and sell without giving much thoughts to the moment. Both these situations may hamper their interests and spoil the possibility of achieving their investment objectives.

CRAFTING BEHAVIOURAL PORTFOLIOS

Investors tend to focus on investment goal diversification rather than on purposeful asset diversification. Consequently, they inefficiently form behavioural portfolios, and change it on the basis of distribution of investment goals and associated mental accounts. At the end of the day, investors take on more risk than is necessary for the level of expected return they achieve.

The psychological biases and tendencies of investors often cause them to think of their portfolios as a *pyramid of assets* (Hirschey and Nofsinger, 2008). Each layer in this investment pyramid is created to meet a specific investment objective (Figure 4). Once an investor meets his objective at one layer, he progresses towards another goal within a separate mental account. To administer the process, investors pick investment themes or asset classes that match his specific goals.

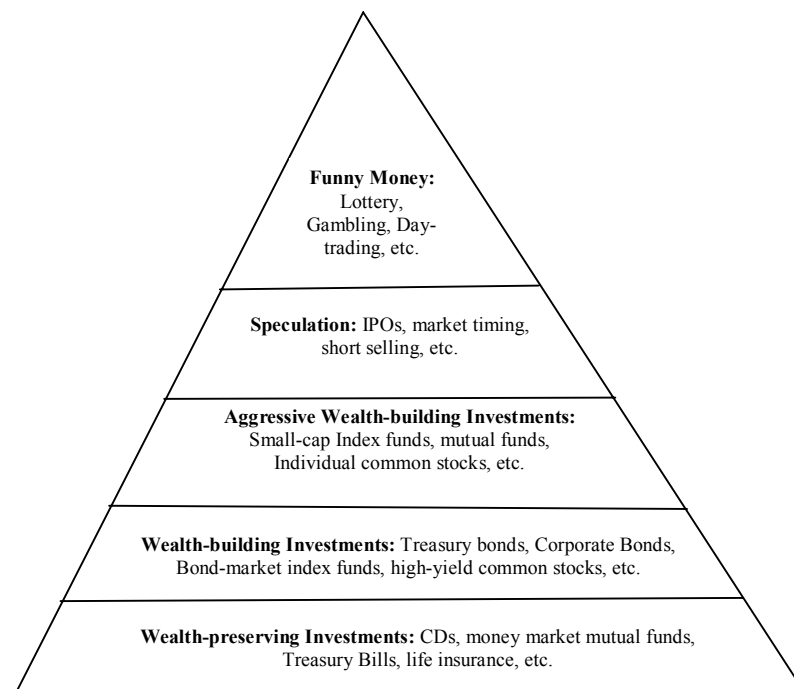


Figure-4: Investment Pyramid

At the very initial stage of investing, investors prefer wealth preserving assets such as bank CDs (Certificates of Deposit), low-risk money market mutual funds, Treasury bills, and insurance products in their portfolios. Once they are sure of basic safety of their investments, they feel that they are emotionally and financially able to take on higher level of risk in the pursuits of higher expected rates of returns. They include wealth-building investment themes in their portfolios. These wealth-building investment products include Treasury bonds, investment grade corporate bonds, bond-market index funds, high-yield common stocks, and so on. Once the wealth-building goal is adequately funded, the typical investor feels ready to take on greater amount of risk in the pursuit of even higher levels of wealth creation. Aggressive wealth building investments include individual common stocks, small-cap index funds, managed mutual funds, etc. when this goal is adequately funded, the investor, now emotionally and financially ready to undertake higher risk, include a range of speculative investment products that might entail significant chance of loss. Common form of speculation include investments in untried companies with initial public offers (IPO's), various market timing strategies, short selling, and so on. Finally, some investors with 'funny money' put such money in gambling, day trading, and lottery tickets where small amounts of money or prior winnings are bet with the full realization that complete loss is possible. Investing in such 'get-rich-quick' investment strategies is often thought to be a form of recreation and not harmful to the investor's long-term emotional and financial well-being. Majority of individual investors feel giving speculation and gambling/day trading more importance in their investment strategies.

It must be noted that two important issues in traditional investment decision making, namely, minimization of risk, and maximization of expected returns are not necessarily

considered by individual investors while drafting such behavioural portfolios. Instead, the number of mental accounts and some other psychological biases such as overconfidence and anchoring, along with the amount of money funding each mental account determines the size of portfolio and asset allocation thereto. Behavioural portfolios are thus determined by the distribution of investment goals and associated mental accounts.

SUMMARY AND CONCLUSION

The research found that unlike the classical finance theory suggests, individual investors do not always act rationally while making investment decisions. Individual investors suffer from several psychological and emotional biases. These biases play an integral role in an investor's decision-making. Heuristics such as representativeness, overconfidence, and anchoring, regret aversion, anchoring, and mental accounting (drawn from the Prospect theory), cognitive dissonance, and greed and fear all influence investor's perception of risk and subsequently his decision making. The findings of the research are that investors display risk-seeking behaviour and avoid selling stocks when faced with loss. They segregate their investments into separate mental accounts created to meet a specific investment objective. Their decisions of asset allocation to their portfolios are to great extent affected by greed and fear. There is suggestive evidence that these emotional and behavioural factors need to be incorporated in the investment strategies formulated for individual investors. Investors while taking investment decisions must consider these biases as risk factor associated with their investment portfolios.

It is the individual investors who are the most susceptible to behavioural anomalies and mental errors. They put their life savings into the stock markets so as to earn money. Recent turmoil in the financial markets around the world has shattered individual investors' confidence in the stock markets. With an objective to create investor's confidence in the stock markets, behavioural issues are the newest of the things which must be considered while formulating investment strategies for individual investors. Investment advisors and finance professionals must incorporate behavioural issues as risk factor in order to formulate efficient investment strategies. This research will help them judge investor's attitudes towards risk with a new perspective, and in a better way, thus leading to better investment decision making.

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