ROLE OF BEHAVIOURAL DISPOSITION IN PORTFOLIO INVESTMENT DECISIONS OF INDIVIDUAL INVESTORS IN RAJASTHAN

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Abstract:

Behavioural economists claim that an investor is not rational as traditionally revealed and behavioural dispositions impact the investment behaviour of the investors. Cognitive and emotional aspects may intervene in making irrational investment decisions. The present paper is an attempt to describe the meaning of the behavioural finance and the various psychological factors that plays an important role in the investment decisions. In order to search for evidences of behavioural biases in the portfolio investment decisions of the investors a survey with questions formed on Likert scale on 5 point scale was created and responses were obtained from investors in Rajasthan who make their own investment decisions. The paper identified through factor analysis Herd Mentality, Mental Accounting, Overconfidence , Anchoring, Confirmation are a few biases which plays an important role in affecting the investment decisions of individual investors.

Keywords: Behavioural finance, Behavioural Biases, Portfolio Investment Decisions.

Introduction

 Behavioral finance is a relatively new paradigm of finance, which seeks to supplement the standard theories of finance by introducing behavioural aspects to the decision making process and provide explanation for why investors make irrational decision. Efficient market hypothesis has been the most important theory that explains the behaviour of agents in the financial markets.

Standard or traditional finance

 Standard finance, also known as *traditional finance*, is based on various theories and principles, for example the arbitrage principles of Miller & Modigliani; the portfolio principles of Markowitz; the capital asset pricing theory of Sharpe, Lintner & Black; and the option-pricing theory of Black, Scholes & Merton. Traditional finance theories are often based on the assumptions of rationality, an efficient market, and profit maximization (Fama, 1970). In traditional theories of finance investment decisions are based on the

assumption that investors act in a rational manner. This means that they behave rationally so they earn returns for the money they put in stock markets.

Although traditional paradigms can be useful in many applications, empirical evidence contradicting traditional finance models began to mount. Despite assumptions to the contrary, people exhibit behavioural biases that influence their investment decisions.

Behavioural Finance

One of the most important factors in investment decisions is the emotions. Behavioural Finance approach investigates the influence of emotions on investment decisions. Modern theory of investors' decision-making suggests that investors do not act rationally at every time while making an investment decision. They deal with several cognitive and psychological errors. These errors are called behavioural biases and are exists in many ways.
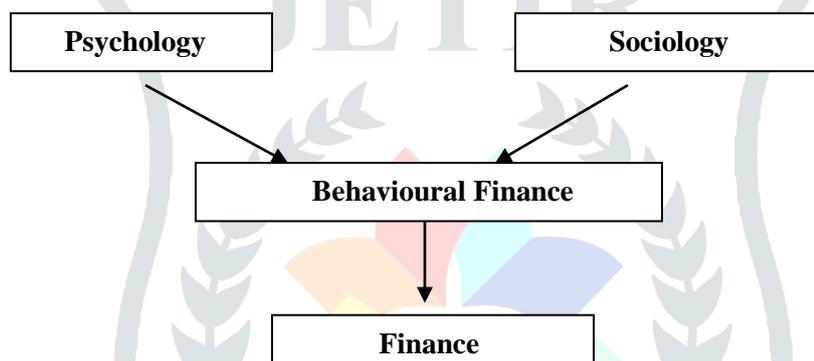
Evolution of Behavioural Finance,Source: Schindler (2007)

Some of the key definitions of behavioural finance are discussed below:

Olsen ,(1998) described behavioral finance as a new paradigm of finance ,which seeks to supplement the standard theories of finance by introducing behavioural aspects to the decision –making process . It deals with individuals and ways of gathering and using information, seeks to understand and predict systematic financial market implications of psychological decision processes. In addition, it focuses on the application of psychological and economic principles for the improvement of financial decision –making.

Behavioural Finance and Investment decisions

The relationship between behavioural finance biases and investors decision –making is a well-researched topic. It studies the psychological aspect of financial decision-making and explains the irrationality of investors in investment decision-making. Usually, the investor's behaviour deviates from making rational or logical decisions and leans towards being influenced by various behavioural biases. These biases influence the investor's rationality in investment decision-making.

Chandra (2008) explored 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 behavioral

decision-making. The investment decision-making is influenced, largely, by behavioural factors like greed and fear, Cognitive Dissonance, heuristics, Mental Accounting, and Anchoring. These behavioral factors must be taken into account as risk factors while making investment decisions.

Review of Research

 Markowitz (1952), Kahneman and Tverskey, (1979), Chandra, (2008) investors are rational and risk averse and will like low risk to high risk for a given level of return. However, in the actual market place, investors show irrational behaviours; they trade abundantly, purchase stock without taken into consideration the fundamental value, base their decisions on past performance, buy stocks which their friends are buying, and keep loss making stocks while selling bullish stocks. The investors often simplify their decision processes and are prone to behavioural fundamentals that might cause systematic errors and lead to satisfactory investment choices, but which do not maximize satisfaction. The study investigates investor psychology and different facets of behaviour in decision making. The basic purpose of the study is to find the effect of behavioural aspects and the relationship between investors behaviour and risk. He found out that investors are not always rational unlike the theories of standard finance. They are subject to various cognitive and emotional errors; they are suffering from several biases while taking the investment decision. Results show that investors who are actually risk averse in their mannerism show the risk seeking behaviour by holding the unprofitable investments.

Benjamin (2010) Anchoring refers to the decision making process where quantitative assessments are required and where these assessments may be impacted by suggestions. People have in their mind some referral points (anchors), for example of previous stock prices. When they get new information they adjust this referral insufficiently (under reaction) to the new information acquired. Anchoring describes how investors tend to emphasis on recent behavior and give less weight to longer time trends. The anchor can be an external like random number and public information or an internal data like self-generated anchor.

Razek (2011),Agarwal (2012), De Bondt and Thaler (1995), Hirshleifer D,Luo GY(2011) , Oberlechner and Osler (2009) defined overconfidence as an overvaluation of the possibility for a set of events. The concept is operationally reflected by comparing whether the definite probability assigned is greater than the portion that is correct for all assessments assigned to the given probability. Overconfidence causes people to overvalue their knowledge, undervalue risks and overvalue their ability to control events and the precision of their information. The author claimed that overconfidence originates in people's biased estimation of evidence. Many researchers find evidence for the presence of the overconfidence bias in different financial decisions. Studies have shown that announcement returns are lower for overconfident bidders as compared to rational bidders. It is the outcome of the strongest identified by psychological research that is to say, investors tend to overvalue the probability of certainty of their information, their successes and capabilities". They are having past   positive outcomes and usually recall only their success

than their failures. They find that there are two factors behind this behavior. These are: the underestimation of risk by the investors and overestimation of the success of their own trading programme. Investors tend to be overconfident in two areas: they underestimate uncertainty and overestimate their own capabilities .

Nofsinger & Sias (1999), Cote & Sanders (1997), Friesen & Weller (2006) propounded incorporation of social psychology into finance has initiated a debate on herd behaviour and its impact on the financial markets. In finance, herding has been defined as "a group of investors trading in the same direction over a period of time" As in psychology, herding in financial market is said to arise when individuals change their personal opinions to match up more closely with the publicly expressed notions of others Friesen & Weller (2006) have explained that the individuals may form herds when they align their behaviour to a mode of collective conduct, by interactive observations of the actions and payoff of others

Shiller, (1997,1998), Barberis & Huang,(2001),Barberis & Thaler, (2003) Ritter (2003), Rockenback Bettina(2002) describes the inclination   of people to place specific events into different mental accounts based on apparent characteristics or the process by which people think about and examine their economical transactions . It is the tendency of people to place specific events into different mental accounts based on hypothetical features. Investors place their investments into randomly separate mental department and react separately and in different ways to the investment based on which department they are in. Mental accounting allows investors to categorize their portfolio into separate accounts .

It describe people's inclination to organise some sources and uses of money in different psychological accounts in their mind, like people may use differently money received as salary versus money saved on purchase etc. This shows that people tend to consider these mental accounts independently, and ignore overall wealth well-being. Investors instead of looking at decision problem as a whole, the decision units, called as mental accounts are treated separately. Main idea underlying mental accounting is that decision makers inclined to differentiate the different type of gambles faced into separate accounts, and then apply prospect theoretic decision rules to each account by ignoring possible interaction. Mental accounting also serves to explain why an investor is likely to abstain from readjusting his reference point for a stock.

Pompian (2012) , revealed that representativeness bias is a faith persistence bias in which people tend to classify new information based on past experiences and classifications. They consider their categorization are suitable and place too much weight on them. It was found that this bias happens because people attempting to obtain meaning from their experiences tend to classify objects and thoughts into personalized categories. When confronted with new information, they use those categories even if the new information does not essentially fit. The new information apparently is similar to or is representative of familiar elements previously classified, but in actuality it can be very dissimilar. Representativeness showed that people tend to connect two events and deem them similar when in actuality they may not be similar in any respect but emerge to be evident.

Pompian (2012) Razek (2011), Thaler (2005), Subrahmanyan (2007) explains regret as the emotion by comparing a given outcome or state of events with the state of an abandon choice. Thus, investors may avoid selling stocks that have gone down in order to avoid the regret of having made a bad investment and difficulty in reporting the loss. People who believe in regret-aversion commit two types of mistakes. The first one is error of commission and the second one is error of omission. The former happens when we choose misdirected actions and the latter happens when we forgo or overlook the opportunities. Investors may avoid selling stocks that have gone down in order to avoid the regret of having made a bad investment and the embarrassment of reporting the loss. They may also find it easier to follow the crowd and buy a popular stock; if it subsequently goes down, it can be rationalized as everyone else owned it. Going against conventional wisdom is harder since it raises the possibility of feeling regret if decisions prove incorrect .Further researchers asserted that investors might sell winners and hold losers because they expect their losers to outshine their winners in the future. An investor who buys a stock because of favourable information might sell that stock when it goes up because she believes her information is now reflected in the price. On the other hand, if the stock goes down she may continue to hold it, believing that the market has not yet come to acknowledge her information. Investors could also select to sell winners and hold losers simply because they believe prices may fall. Previous research offers some support for the hypothesis that investors sell winners more readily than losers, but this research is generally unable to distinguish among various motivations investors might have for doing so. For instance, noted that past winners have tremendous selling pressure and past losers are not shunned as quickly as they should be, causing under-reaction to public information.

Venkatesh,(2002). Ulrich and Zank (2005) Thaler and Shefrin (1981), Loss aversion is another important psychological concept which receives increasing attention in economic analysis. The investor is a risk-seeker when faced with the prospect of losses, but is risk averse when faced with the prospects of enjoying gains. This phenomenon is called loss aversion discuss the loss aversion theory with risk aversion and accept the Kahneman and Tversky views. Loss aversion and risk taking require all the investors avoid their losses and protect their investments. As investors are subject to temptation, and they look for tools to improve self control.

Agrawal (2012), Ritter (2003) maintains that many a times, individuals conduct oneself illogically and their decisions are biased. They inclined to use modus operandi in arriving at decisions due to time and capacity limitation in processing of information. When faced with complex judgments or decisions, they ease the task by relying on heuristics or general rules of thumb. Ritter illustrates the rule of thumb thus, when faced with N choices for how to invest retirement money, many people deploy using 1/N rule. If there are three funds, one-third goes into each. If two are stock funds, two-thirds goes into equities. If one of the three is a stock fund, one-third goes into equities".

Grinblatt and Keloharju (2001a), Weber and Camerer (1998), Siddique Saif (2008) investigated the disposition effect using the trading records for virtually all Finnish investors during 1995 and 1996 administered to a wide variety of factors, they find that investors have an inclination to hold onto losers. Relative to a stock with a capital gain, a stock with a capital loss of up to 30% is 21% less likely to be sold; a stock with a capital loss in excess of 30% is 32% less likely to be sold. Furthermore, stocks with high previous returns or trading near their monthly high are hopeful to be sold. Another experiment of the disposition effect involves buying and selling six imaginary stocks in trading rounds. They found that investors are about 50% more likely to realize gains compared to losses .Investors considered security of the investment as first priority and they believe that whatever profits they made, it is because of their own analysis and evaluation and held other persons responsible for the losses.

Limitations of the Study

- The limitation arises out of the fact that India is a vast country, and this study cannot be considered an evaluation of the average Indian investor.

- The sample size is small and the location was chosen mainly because it was the researcher's home city thus making data collection convenient. It remains to be seen whether investors in other parts of the country would exhibit a similar behaviour as would be found out by this study.
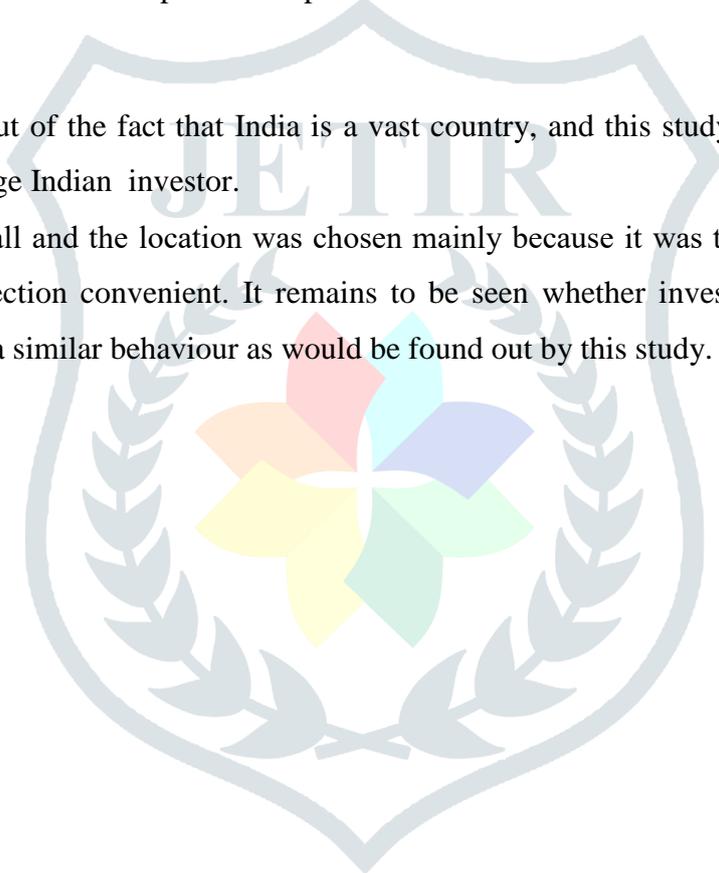
Objective

- The primary objective of the study is to find the various behavioural biases that plays an important role in portfolio investment decisions of individual investors.

- **Methodology**

  It is a micro investigation nature which gives the role of behavioural biases on the portfolio investment decisions of individual investors .

  The overall sample design is as follows:

  Universe: Adults above 18 years of age,

  Sampling Frame: List of investing clients from equity brokers in Rajasthan

  Sampling Unit: List of male and female investors in Rajasthan.

  Sampling Technique: Non-Probability Convenience Sampling method,

  Sample Size: 220 respondents.

Data Collection

In the present study the primary data is collected through a structured questionnaire consisting of questions based on 5 point likert scale and the five -level Likert item takes the form (1) Strongly Agree (2) Agree (3) Not Sure (4) Disagree (5) Strongly Disagree which measures the investors attitude and the rest is designed to capture quantitative information. Secondary data have been collected from various published sources such as books, journals, magazines, newspapers and selected case studies These items are quantified by being assigned scores depending on the analysis technique used.

Data Analysis and Interpretation

The questionnaire was analysed using Factor analysis **.** The interpretation and the analysis of the result obtained is as follows:

Table:1
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.863
Bartlett's Test of Sphericity	Approx. Chi-Square	15019.642
	Df	861
	Sig.	.000

The factor loadings of each variable is depicted by Rotated Component Matrix.

	Component						
	1	2	3	4	5	6	7
I purchase investment recommended by my friends.		.832					

	C1	C2	C3	C4	C5	C6
React quickly to the changes of other investors decisions.		.833				
See others gaining from particular stock you immediately buy that.		.900				
Buy a stock after hearing a great stock tip from neighbor.		.559				
Your friend invested in security and secure gain you start looking for similar kind of investment.		.900				
Surety of making correct decision.				.454		
Think that market trend is often consistent with your perception.				.416		
More confident in my own investment opinion.				.851		
Able to anticipate the end of good or poor market returns.				.730		
Predict future share prices better than the other.				-.545		
Avoid selling shares that have decreased in value.	.693					
Feel more sorrow about holding losing stock.	.892					
Sell a stock whose price is increasing and retain a stock whose price is decreasing.	.419					
Prefer to hold the stock which is a loser and sell the profit making stock too soon.	.575					
Prefer to fix the percentage of investment.			.813			
Face Loss in crop.			-.739			
Treat each element of investment portfolio separately.			-.800			
You consider some investments high and some investments low.			.941			
Prefer to stick on to old information.						
Prefer to invest in less risky avenue.						.869
						.819
Prefer to invest only on familiarity stocks.						.906
Never invest in those avenues which have bought losses.					.908	
Use stock purchase price as a reference point.					.841	
Mostly rely on company historical financial data.					.662	
Unlikely to buy a stock if it expensive than last year.					.878	

Consider the information from friends reliable.						.753	
Past history influences present investment.						.919	
Prefer to invest in a well known security rather than a newly one.						.814	
Past 3 years A given very good dividend therefore future also shows the same trend for A.						.932	
Invest in popular stocks and avoid stocks that have performed poorly in the recent past.						.722	
Other stocks of a company are performing well same co offers new share,I will buy the same.						.841	
Prior loss more risk averse.	.695						
Losses are more painful than gains are pleasurable to me.	.914						
Prefer to buy non riskier sticks.	.859						
More concerned about a large loss than missing a substantial gain.	.936						
Sell some missing stock in your portfolio because afraid to lose this profit.	.916						
Blame myself hard if I have foregone a profitable security investment.	.868						
Feel sorrow about holding losing amount too long than about selling winning stocks too soon.	.909						
I will feel regret and disappointed if the price of the stock I sold keeps growing.	.958						
Prefer to buy local stocks than international stocks.						.914	
Forecast the changes in stock prices in future based on the recent stock prices.						.759	
Invest in stock that appear more frequently in news or advertisements.						.793	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Inferential Statistics: After ensuring that the data is approximately multivariate normal through KMO and Bartlett's test and acceptable for factor analysis, I extracted 7 factors by using the method of principal component analysis and rotation method of Varimax with Kaiser normalization criteria of Eigen value more than one.

The KMO measures whether the distribution of values is adequate for conducting factor analysis .The result of KMO is 0.863, (Table:1) which depicts that it is meritorious. The Bartlett's test measures the multivariate normality of the data set. The significance value less than 0.05 indicates that the data does not produce an identity matrix and is thus approximately multivariate normal and acceptable for factor analysis.

There are seven factors that are extracted by using the method of principal component and rotation method of varimax with Kaiser normalization criteria of Eigen value more than one .The results of factor analysis are shown in rotated component matrix (Table:2).

The Table 2 indicates that Factor 1 has a variable related to Disposition Effect; Factor 2 has a variable related to Herding bias ;Factor 3 related to Mental Accounting bias; Factor 4 has a variable related to Overconfidence bias; Factor 5 relates to Anchoring; Factor 6 has a variable related to Representativeness bias and Factor 7 has a variable related to Conservatism bias.

Reliability Analysis: The Cronbach's alpha is computed to measure the reliability of factors extracted from factor analysis. The results are shown in Table 3.The Cronbach's alpha is measuring the reliability of item loading into 7 items. Since the value of Cronbach's alpha is more than 0.005 for all the factors .It means all factors are consistent and reliable.

Table:3
Reliability Test

Factors	Cronbach's Alpha	No.of Items
1	0.913	12
2	0.898	5
3	0.596	4
4	0.794	5
5	0.898	5
6	0.961	8
7	0.932	3

Conclusion

The present study deals with the influence of biases at a behavioural level and their role on the investment decisions of the investors. Seven biases have been extracted with the help of Factor analysis method namely Disposition Effect , Herding bias , Mental Accounting, Overconfidence bias, Anchoring, Availability bias , Representativeness bias and Conservatism bias. According to weights Herding, Disposition effect such as Loss Aversion, Regret Aversion, Mental Accounting bias affects the investors the most and finally they impact the investment decisions and bound them to take irrational decisions. The roots of these biases can also be traced at a neurological level. In terms of future research ,there is scope to integrate from multidisciplinary areas like finance, behavioural economics,and neuroeconomics and find out how decisions

are made and how the decision making can be improved.The nature of the field promises that a researcher would be presented with many opportunities to be innovative and creative.

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