



## Relevance of Behaviour in Finance: Conceptual Analysis

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### Abstract

Human behaviour and decision-making process are interrelated, finance is of no exception. As an investor (individual, group, institution) no one can negate the implications of human behaviour. Investors are not logical or reasonable all the time as we had experienced various financial markets anomalies, financial crisis, volatility, etc. By discussing various research papers, discussion papers, working papers, book articles etc this paper provides conceptual analysis of relevance of behaviour in financial/investment decision making.

Key Words; standard theories, efficient market hypothesis, behavioural finance, modern portfolio theory, capital asset pricing model

### I. Introduction;

**“Human Behaviour flows from three main sources desire, emotion and knowledge”**

Plato

Behaviour and finance are not different, rather interrelated. Behaviour is all about emotions, personalities, psychology, and sociology. And finance is all about numbers, equations, statistics.

The classical or standard finance theory primarily assumes that human beings are “Rational” i.e. they make decisions after carefully analysing the situation. But practically this assumption does not hold true; human beings do not reflect “Rational behaviour” all the times. Here is the need to link and understand the impact of behaviour on finance. Behavioural finance helps us to understand the complexities of human behaviour (mood, chances, likes, dislikes, preferences etc) as far as finance/ investment decisions are concerned. The behavioural finance as a branch of behavioural economics emerged in the year 1980’s when research scholar’s and practitioners started questioning the efficacy of “Efficient Market Hypothesis” (E.M.H) upon which

classical finance theory is based. This theory is based on the premise that at any given point of time price of all trade securities and assets is correct and reflects of publicly available information. It further substantiates that there is only one price for any security/asset at any point of time. But in reality, we experienced difference prices at same moment, some investors earn abnormal returns, volatility and bubbles. So, all investors cannot be claimed as rational decision makers as theorizes by E.M.H.

## II.Objective and Methodology;

The main objective of this paper is to highlight the relevance of behavioural finance to understand the behaviour of investors in the financial market. The paper is mainly conceptual in nature and applies descriptive research methodology and uses different research papers, discussion papers, articles, and books related to behavioural finance.

## III.Behavioural Finance: Reasons for Evolution;

Standard finance theories are mainly based on four pillars; Arbitrage Principle of Merton Miller and Franco Modigliani, Modern Portfolio Theory (1952) of Harry Markowitz; Capital Asset Pricing Model of John Linter and William Sharpe; Option Pricing Theory of Fischer Black, Myron Scholes and Robert Merton.

In addition, these theories are based on the following assumptions;

- Investors are rational;
- Stock / financial Markets are perfect;
- Investors have the ability to design their own portfolios based on principles of risk and return;
- Expected returns are functions of only one variable which is risk.

“The importance of arbitrage conditions in financial economics has been recognized since Modigliani and Miller's classic work on the financial structure of the firm. They showed that if a firm could change its market value by purely financial operations such as adjusting its debt-equity ratio, then individual shareholders and bondholders could engage in analogous portfolio transactions that would yield pure arbitrage profits. If the market was efficient enough to eliminate arbitrage profits for the individual shareholders, then it would eliminate arbitrage profits for the firm as well”<sup>2</sup>

In 1952, Harry Markowitz provided modern portfolio theory. In this theory he advocated determination of minimum level of risk for an expected return. This theory hypothesis that rational investors will favour a portfolio of securities with a lower risk level over a higher risk level for the same level of return. This theory was an appropriate starting point for asset allocation models, but merely placed the theoretical foundations. The significant elaborations in contemporary finance that is based on modern portfolio theory incorporated the Capital Asset Pricing Model (CAPM) and Efficient Market Hypothesis (EMH), generally known as Fama-French Factor Model. The CAPM was given by Jack Treynor, William Sharpe, John Lintner and Jan Mossin in 1960's. This model provided a structure through which investors could recognized the linkages between return and risk on the basis of mean- variance analysis. It further classified market risk into two categories; 1)

<sup>2</sup>Hal,R. Varian, The Arbitrage Principle in Financial Economics,” Journal Of Economic Perspective” Vol.1,No 2,FALL,1987

systematic or undiversified risk and 2) Non-systematic or undiversifiable risk. This classification helped investors to differentiate between the returns generated from “the Market” (i.e., Beta) and any excess return (i.e., alpha). These two models viz. MPT and CAPM universalized the idea of applying a market cap weighted index portfolio. Another significant contribution in standard finance is Efficient Market Hypothesis (EMH) developed by Fama in 1970’s. According to this theory financial markets are efficient as far as the distribution of information is concerned and it is not possible to beat the market. The EMH positions that current asset price is traded at its fair value as all information has already reflected in a asset price or market value. As a result, arbitrageurs can- not create abnormal returns to outperform the market.

The CAPM was further elaborated by Stephen Ross through initiation of Asset Pricing Theory (APT) in 1976. According to this theory, irrational of noise traders creates a striking opportunity in the financial markets through the creation of mispriced securities. The rational traders or arbitrageurs quickly clutch this opportunity and the mispricing created by the irritational traders will be corrected. The arbitrage assumes that when investors try to find out abnormal return opportunities because of deviation from the fundamental value, the action of some speculators will eventually increase its demand. Higher demand will increase the prices, thereby leading to adjustment in prices and subsequently evaporating the opportunity for abnormal return. Hence, the stock prices would mirror the available information correctly and therefore, efficient allocation of capital is possible. The East Asian crisis of 1997 weaken the effectiveness of EMH. In 1992, EMH was expanded by Fama and French by incorporating three factors – market size, value and market risk-to explain market returns and to overcome many limitations of CAPM.

For a considerable period of time these theories were widely accepted as fundamental interpretation for investor’s behaviour and market behaviour. However, in contemporary times researcher’s start arguing that these traditional theories are not effective to explain realistic investors behaviour and actual market conditions. Most of the time, investors ignore the rationale behaviour and make biased decisions. Role of experience, age demographic factors, access to information, family values, culture, ethics etc also have the capacity to impact the investment decision making ability of an investors which was completely abandoned by traditional finance theorists. In addition, various economic events such as East Asian crisis 1997, Tech Bubble 2000, Global financial Crisis 2008 significantly challenged the soundness of these theories. The Global financial crisis also fetched behavioural finance to the fore front as researchers found strong evidence of irrational behaviour in both financial markets and in real economy.

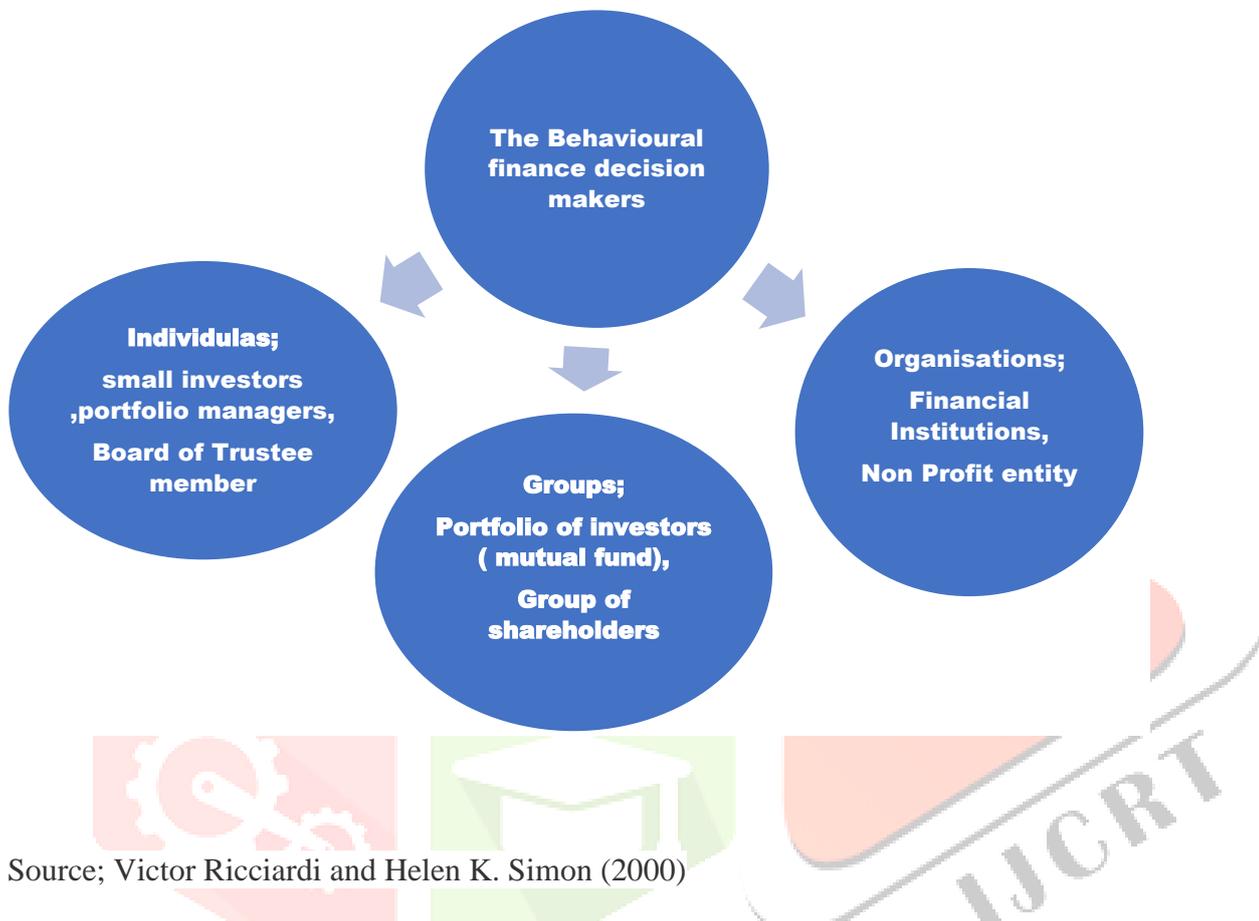
#### **IV.Behavioural Finance: Evolution of Concept;**

To it put simple, behavioural finance tries to describe What to invest? How to invest? And where to invest? Mainly from human perspective.

<sup>3</sup>Behavioural finance is the result of the structure of various sciences (Ricciardi & Simon, 2000) viz. **psychology** a science that analyses processes of behaviour and mind, how processes are influenced by physical,

<sup>3</sup> Egidijus Bikas et al. “ Behavioural Finance: The Emergence and Development Trends”, Procedia - Social and Behavioral Sciences , 82, ( 2013 ) pp 870 – 876

psychical, and external environment of human being; **finances** a system of formation, distribution and use of resources; and sociology systematic science about socio- behaviour of human being or a group, emphasising the influence of social relations on people attitude and behaviour. These has been substantial discussion and deliberations over the universally accepted definition of behavioural finance as this field is still evolving and improving. But commonly, we can say that behavioural finance attempts to synthesize various psychological and sociological factors that can affect financial decision-making process of various participants (individual, groups, institutions and entities) of financial markets.



Source; Victor Ricciardi and Helen K. Simon (2000)

<sup>4</sup>Behavioural finance is based on the alternative notion that investors, or at least a significant minority of them, are subject to behavioural biases that mean their financial decisions can be less than fully rational. Evidence of these biases has typically come from cognitive psychology literature and has then been applied in a financial context.

Some of the behavioural biases are;

- Overconfidence and overoptimism—investors overestimate their ability and the accuracy of the information they have.
- Representativeness—investors assess situations based on superficial characteristics rather than underlying probabilities.
- Conservatism—forecasters cling to prior beliefs in the face of new information.

- Availability bias—investors overstate the probabilities of recently observed or experienced events because the memory is fresh.
- Frame dependence and anchoring—the form of presentation of information can affect the decision made.
- Mental accounting—individuals allocate wealth to separate mental compartments and ignore fungibility and correlation effects.
- Regret aversion—individuals make decisions in a way that allows them to avoid feeling emotional pain in the event of an adverse outcome.

Behavioural finance also challenges the use of conventional utility functions based on the idea of risk aversion.

As for the definition of behavioural finance in the early XVIII century, Adam Smith in *The Theory of Moral Sentiments* determined mental and emotional human interaction and communication basics. The author basing on such behavioural elements as pride, disgrace, insecurity, egoism tried to explain the actions of a man and the pursuit of profit (Smith, 1998). However, from the beginning of the XIX century when economics was dominated by neoclassical theories, psychology was displaced from the factors which have an effect on discourse of economy until the mid of XX century. Behavioural finance as a science originates in 1985 when two articles that were published in the "Journal of Finance" (De Bondt & Thaler, 1985).

As a result, <sup>5</sup>during 1990s, a new field known as behavioural finance began to emerge in many academic journals, business publications, and even local newspapers. The foundations of behavioural finance, however, can be traced back over 150 years. Several original books written in the 1800s and early 1900s marked the beginning of the behavioural finance school. Originally published in 1841, MacKay's *Extraordinary Popular "Delusions And The Madness Of Crowds"* presents a chronological timeline of the various panics and schemes throughout history. This work shows how group behaviour applies to the financial markets of today. Le Bon's important work, *"The Crowd: A Study of The Popular Mind"*, discusses the role of "crowds" (also known as crowd psychology) and group behaviour as they apply to the fields of behavioural finance, social psychology, sociology, and history. Selden's 1912 book *"Psychology of The Stock Market"* was one of the first to apply the field of psychology directly to the stock market.

We can also link the history of behavioural finance with Herbert A Simon (Noble lieutenant 1978), as he for the first time conceptualize the behavioural finance in modern time. Traditional economic theory postulates an "economic man," who, in the course of being "economic" is also "rational." This man is assumed to have knowledge of the relevant aspects of his environment which, if not absolutely complete, is at least impressively clear and voluminous. He is assumed also to have a well-organized and stable system of preferences, and a skill in computation that enables him to calculate, for the alternative courses of action that are available to him, which of these will permit him to reach the highest attainable point on his preference scale. Recent developments in economics, and particularly in the theory of the business firm, have raised great doubts as to whether this schematized model of economic man provides a suitable foundation on which to erect a theory -

<sup>5</sup>Victor Ricciardi and Helen K. Simon (2000), "What is Behavioral Finance" *Business, Education and Technology Journal* Fall 2000

whether it be a theory of how firms do behave, or of how they "should" rationally behave. I shall assume that the concept of "economic man" (and, I might add, of his brother "administrative man") is in need of fairly drastic revision.<sup>6</sup>

Though, the more organised study on behavioural finance was actually started with the work of Amos Tversky and Daniel Kahneman (1973) in which they discussed various heuristics affecting Investment decisions. <sup>7</sup>They explored a judgmental heuristic in which a person evaluates the frequency of classes or the probability of events by availability, i.e., by the ease with which relevant instances come to mind. In general, availability is correlated with ecological frequency, but it is also affected by other factors. Consequently, the reliance on the availability heuristic leads to systematic biases. Such biases are demonstrated in the judged frequency of classes of words, of combinatorial outcomes, and of repeated events. The phenomenon of illusory correlation is explained as an **availability bias** (i.e. tendency of people to rely on easily available information) In 1979 famous Prospect Theory was developed by Tversky & Kahneman, where they found that individuals will respond differently to equivalent situations depending on whether it is presented in the context of losses or gains and found that individuals are much more distressed by prospective losses than they are happy by equivalent gains.

“Behavioural economics (which by many definitions includes behavioural finance) began largely as the result of prospect theory as developed by Daniel Kahneman and Amos Tversky. Interestingly, Kahneman and Tversky were both psychologists with no or little training in classical finance. Prospect Theory proved useful to economics however, because it attempts to model the way people actually make decisions as opposed to simply relying on the utility decision-making strategies that made up finance theory. Prospect theory argues that people make decisions based on the potential value of gains and losses rather than the utility of the decision. Richard Thaler, who was already a finance theorist at the time added the economic and finance theory necessary to apply prospect theory to financial markets. **All three of these men, Amos Tversky, Daniel Kahneman, and Richard Thaler, are today considered to be among the founding fathers of behavioural finance**”<sup>8</sup>.

Behavioural finance definition has two facets, individual investors and the whole market. In other words, behavioural finance can be classified into macro behavioural finance and micro behavioural finance (**Pompian 2006**). Anomalies of efficient market hypothesis is explained by macro behavioural finance whereas micro behavioural finance analyses the behaviour and deviations of individual investors. In addition, different researcher scholars define behavioural finance differently.

**Fuller (1998)** explains his viewpoint of behavioural finance by perceiving his belief that people systematically make mental errors and mis-judgments when they invest their money. As a portfolio manager or as an

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<sup>6</sup> Herbert A. Simon (Feb 1955), "A Behavioural Model of Rational Choice" The Quarterly Journal of Economics, Vol. 69, No. 1 (Feb., 1955), pp. 99-118

<sup>7</sup> Amos Tversky and Daniel Kahneman, "Availability: A heuristic for judging frequency and probability" Cognitive Psychology, Vol 5, Issue 2, (Sept 1973), pp 207-232.

<sup>8</sup> Robert Christopher Hammond, "Behavioral finance: Its history and its future" South-eastern University – Lakeland, FALL 2015

individual investor, recognizing the mental mistakes of others (a mis-priced security such as a stock or bond) may present an opportunity to make a superior investment return (chance to arbitrage).

**Thaler (1999)** described that when we combine classical economics with financial theories within the domain of psychology and decision making it becomes behavioural finance. **Goldberg and Von Nitzsch (1999)** defined behavioural finance from the perspective of financial market theory with more focus on behaviour. **Ritter (2003)** stated that behavioural finance and standard financial theories both are complementary where earlier one attempts to introduce the psychological dimensions to decision making process. **Fuller (2000)**, **Fromlet (2001)** and **Jordan and Miller (2008)** focus more on individual attitude and emotions while explaining behavioural finance. **Bodie et al. (2007)** describe behavioural finance as a set of models of financial markets and underline possible interference of psychological factors in to investor's behaviour. **Shefrin (2000)** portrays behavioral finance as the interface of psychology with the financial actions and performance of "practitioners" (all types/categories of investors). He recommends that these investors should be aware of their own "investment mistakes" as well the "errors of judgment" of their counterparts as "One investor's mistakes can become another investor's profits". **Fischer & Gerhardt (2007)** provide detail list of behavioral factors affecting decision making. These are Love; greed; fear; herd ; herding tendency ; recent experience ; over-confidence etc. **Hon-Snir et al. (2012)** examine five different behavioural biases such as disposition effect, herd behaviour, availability heuristic, gambler's fallacy and hot hand fallacy and concludes that more skilful investors are less affected by the behaviour biases.

#### **V. Behavioural Finance: Road ahead;**

The main focal point of Behavioural finance is on human biases that result in unreasoned and illogical investment decisions. A basic principle is that the human mind is basically strive for familiar trends in observed events and put those trends within a context based on past experience. We are creatures of emotion, habit, belief system, tradition, culture etc and this process leads us to act in an expected way, sometimes to our own detriment.

We can say that behavioural finance is a new emerging academic discipline which tries to employ the understandings of psychologists to comprehend the behaviour of financial markets as well as investors. Surely, it can help us to evade emotion-based speculation which results into losses, thereby develops an effective wealth management strategy. But still, the key question is that "how its application is valuable to investors?"

To better understand the behavioural biases practioner's and researcher scholars must understand the various personality parameters of an individual. This field of study has changed the standard/traditional finance in many ways such as in

- capital budgeting and investment decisions where behavioural finance looks beyond cost-related measures, it takes care of a manager's behavioural traits such as optimism and overconfidence. Behavioural myths that lead managers to overvalue accuracy of information and their ability to control risks.

- In dividend policy decisions shareholders generally prefer current dividend over big gain in future as dividend volatility is lower than stock volatility.
- Another area where behavioural explanations are required is asset allocation and trading as retail or individual investors do not have time-consistent preferences and the presence of default bias and extrapolation bias is strong. Even in trading portfolio, the main objective is how to rebalance the portfolio over time. Inertia operates in this situation, often preventing investors in making well-defined rational investment decisions.
- “Pension Participation; Beyond the field of behavioural finance, there are numerous applications of the behavioural variable in public policy. Pension participation is an example. Many countries with developed markets have attempted social security and well-defined benefit plans and contribution plans in the realm of pensions. There are a number of decisions awaiting the participant of a pension programme. This includes decisions like whether to participate, how much to contribute, where to allocate assets, how to rebalance allocation and how to handle the sum post retirement. Default option has a major impact in the way the programme design is perceived among participants. For instance, it has been found that default setting like ‘voluntary opt-in’ has a more positive impact on enrolment than an ‘opt-out’ arrangement on participation level. At the stage of enrolment, status-quo bias, peer effect and choice overload operate making ‘opt-in’ default setting to ensure better participation. At the next stage of deciding contribution level, strong default bias and reinforcement learning heuristic operates through which individuals increase weights on strategies where they had previously experienced success”<sup>9</sup>

## VI. Concluding Remarks;

To conclude we must say that we should acknowledge the shortcomings and limitations of standard/traditional finance theories, and at the same time try to accentuate the biased free decision-making process. Financial behaviour can be better explained with the help of psychology. The emergence and growth of behavioural finance is definitely a positive side to better understand the investors behaviour.

“Behavioural finance is based on research of human and social recognition and emotional tolerance studies to identify and understand incoming economic decisions. Behaviour finance examines recognition and emotional factors influence on market changes and concentrates on the limited human rationality, explains the psychology effect on the financial activities and argues that financial phenomena can be better explained due to the fact that financial market participants are not rational and their decisions are limited. Non-professional investors' financial behaviour patterns analysis allows us grasp and justify the relevance and importance of financial behaviour. The main difference between traditional and behavioural finances is that the first does not deal with the questions WHY investors make one or another decision”<sup>10</sup>

<sup>9</sup> Kuriakose, Francis, “Behavioural Finance: Beginnings and Applications” MPRA Paper No 84841, May 2017

<sup>10</sup> Egidijus Bikas et al. “Behavioural Finance: The Emergence and Development Trends”, Procedia - Social and Behavioral Sciences, 82, (2013) pp 870 – 876

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