

THE EFFICIENT MARKET HYPOTHESIS OF FAMA AND FESTINGER'S COGNITIVE DISSONANCE

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ABSTRACT

The role of bias in investor's decision making is no more a subject of debate. Empirical evidence supporting the influence of bias amongst investors is growing since the 1980s. This paper is an attempt to understand the concept of cognitive dissonance given by Festinger¹¹(1957) which laid the foundation for the study of investor bias. It discusses Eugene Fama's Efficient Market Hypothesis which is all pervasive in finance literature and the challenges it confronts from the growing field of Behavioural finance. The paper reviews earlier empirical studies on cognitive bias amongst the representative agents, to understand the influence of bias and irrationality among investors. The first section of the paper gives the theoretical background to efficient market hypothesis and the concept of cognitive dissonance. The second section discusses the implications of bias on the investor's decision making, followed by a review of studies to support the claim. The study concludes by emphasizing the need for investors to understand the influence of bias and prevent themselves from succumbing to psychologically induced errors.

Key Words : *Behavioural Finance, Cognitive Dissonance, Efficient Markets, Rationality, Investor Bias*

Introduction & Background of the Study :

It was in the 1960s, that Paul Samuelson and Eugene Fama, who arrived at the efficient market concept through two different research paths. Fama (1965)¹² defined efficient market as a market with (1) large number of **rational** profit maximizers competing against each other to predict future values of individual securities, and (2) in which important current **information is almost freely available** to all participants. So in the efficient market, on the average, competition will cause the full effects of new information on intrinsic value to be reflected instantaneously in actual prices. The efficient market theory tells us that competition among market participants will cause the return from using information to be commensurate with its cost. Therefore, one cannot expect to earn above normal returns from using publicly available information.

This theory was subjected to rigorous research, and as Michael Jensen (1978)¹³ says, there is no other proportion in economics which has more solid empirical evidence supporting it than the efficient market hypothesis. Even as EMH gained dominance, there was a continuous debate on the assumption of rationality and that majority of investors make rational decisions based on publicly available information and secondly the implication that the market price is always right. The most persistent challenge to Fama's Efficient Market Hypothesis has come from the growing field of Behavioural Finance. Behavioural Finance is a branch of Finance and Economics that applies research from the field of psychology, sociology and more recently, neuroscience to understand investor behavior.

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Proponents of Behavioural Finance believe that numerous factors both rational and irrational, drive investor behavior. They also believe that market price is not always a fair estimate of the underlying fundamental value. Behaviourists believe that investor psychology can drive market prices and fundamental value very far apart (Hersh Shefrin)¹⁴

Behavioural Finance is a new approach to financial markets that has emerged in recent years. It argues that some financial phenomena can be better understood using models in which some agents are not fully rational. Continuous research on the subject shows that in an economy where rational and irrational traders interact, irrationality can have a substantial and long-lived impact on prices.

Psychology is a major building block of behavioral finance. Psychologists have spent years studying the type of errors we are prone to. There are many human *cognitive biases* that cause investors to make systematic errors which fuel their tendency toward irrational exuberance. For guidance on this, economists turn to the experimental evidence compiled by cognitive psychologists on the systematic biases that arise when people form beliefs and on people's preferences.

Festinger's Cognitive Dissonance Bias :

Cognitive Dissonance encompasses the responses that arise as people struggle to harmonize cognitions and thereby relieve their mental discomfort. When newly acquired information conflicts with preexisting understandings, people often experience mental discomfort which is a psychological phenomenon called *cognitive dissonance* by Festinger (1957). Festinger's theory asserts that individuals are distressed by conflicting cognitive elements, such as a discrepancy between empirical evidence and past choice, and that they alter their beliefs to support past decisions in order to reduce this discomfort. In the context of investment decision making, cognitive dissonance can be considered a psychological cost that investors seek to reduce by adjusting their beliefs about past investment choices.

Anytime someone feels compelled to choose between alternatives, some sense of conflict is sure

to follow the decision. This is because the selected alternative often poses downsides, while the rejected alternative has redeeming characteristics. These factors challenge the decision maker's confidence in the trade-off he or she has just negotiated. Commitment, which indicates an emotional attachment by an individual to the final decision, always precedes the surfacing of cognitive dissonance. If facts challenge the course to which a subject is emotionally attached, then those facts pose emotional threats. Most people try to avoid dissonant situations and will even ignore potentially relevant information to avoid psychological conflict. Theorists have identified two main aspects of cognitive dissonance.

1. **Selective Perception:** Subjects suffering from selective perception only register information that appears to affirm a chosen course, thus producing a view of reality that is incomplete and hence inaccurate. Unable to objectively understand available evidence, people become increasingly prone to subsequent miscalculations.
2. **Selective Decision making:** selective decision making usually occurs when commitment to an original decision course is high. Selective decision making rationalizes actions that enable a person to adhere to that course, even if at an exorbitant economic cost. Selective decision makers might, for example, continue to invest in a project whose prospects have soured in order to avoid 'wasting' the balance of previously sunk funds. Many studies show that people will subjectively reinforce decisions or commitments they have already made.

Implications of Bias on Investor's Decision Making :

According to Michael Copian, some of the behaviors that can cause investment mistakes are summarized below.

1. Cognitive dissonance can cause investors to hold losing securities positions that they

otherwise would sell because they want to avoid the mental pain associated with admitting that they made a bad decision.

2. Cognitive dissonance can cause investors to continue to invest in a security that they already own after it has gone down (average down) to confirm an earlier decision to invest in that security without judging the new investment with objectivity and rationality.
3. Cognitive Dissonance can cause investors to get caught up in herds of behavior, that is, people avoid information that counters an earlier decision (cognitive dissonance) until so much counter information is released that investors herd together and cause a deluge of behavior that is counter to that decision.
4. Cognitive dissonance can cause investors to believe 'its different this time'. People who purchased high flying, hugely overvalued stocks in the 1990s ignored evidence that there were no excess returns from purchasing the most expensive stocks available. In fact, most high flying companies are now far below their peaks in price.

Review of Literature Supporting the Above Theory :

Leon Festinger (1957), renowned psychologist was the first to give the theory about cognitive dissonance. Several empirical studies have confirmed the influence of cognitive biases during investment decisions. A review of such studies is summarized below, which supports the claims made in the earlier paragraphs. Each of the studies indicates that the investor is not always rational and is predisposed to certain kind of biases.

Erlich, Gutmann, Schonbach and Mills (1957)¹⁵ examined consumer response to advertising after a major purchase decision like a new car. They

observed that new car owners selectively choose advertisements that reinforced the efficacy of their recent purchase decision. The advertisement reduced the uncertainty they felt about the wisdom of their choice

Researchers note that investor dollars flow into winning funds more rapidly than they flow out of losing funds. This according to **Ippolito (1992)**¹⁶ is an evidence of irrationality.

Akerlof and Dickens (1982)¹⁷ have studied cognitive dissonance in the labour market. They show how a rational individual may adjust beliefs about job risk to reduce dissonance. (**William N. Goetzmann and Nadav Peles (1997)**¹⁸ also find some evidence of such anxiety in mutual fund purchase decisions.

De Bondt and Thaler (1985)¹⁹ argue that mean reversion in stock prices is evidence of investor over reaction where investors overemphasizes recent firm performance in forming future expectations.

DeLong, Shliefer , Summers and Waldman (1990)²⁰ incorporate irrational traders with erroneous stochastic beliefs into a model of asset markets to explain equity premium puzzle.

Thaler , Kahneman and Knetsch (1992)²¹, find an endowment effect among subjects endowed with even a relatively low cost gift. People are more likely to believe something they own is better than something they do not own

William N. Goetzmann and Nadav Peles (1997) present evidence from the questionnaire studies of mutual fund investors about recollection of past fund performance. The magnitude of psychological and economic frictions in the mutual fund industry was examined via a cross- sectional study of equity mutual funds. They found that investor memories exhibit a positive bias, consistent with current psychological models. Even relatively sophisticated investors display a positive bias in their recollection of past fund performance. They also found that the degree of bias is conditional upon previous investor choice, a phenomenon related to the well – known theory of cognitive dissonance.

Michael M. Pompian (2009)²¹ recommends advising clients based on their behavioural profile rather than just relying on a risk tolerance questionnaire. He uses the 'bottom-up' approach which means that for an advisor to advise and treat behavioural biases, he or she must first test for all biases in the client and then determine which ones a client has before being able to use bias information to create a customized investment plan.

Conclusion

The study so far reveals that we can enrich our understanding of the financial markets with a human element added to it. Behaviorists also agree that the efficient market theory is the most important

contribution to finance and permeates and pervades everything we do. There are several points at which the two schools intersect. Risk Profiling is an important portfolio management process which helps the investors determine their risk tolerance level, which helps the investor in asset allocation. As the investor psychology is complex with biases, experts suggest that it would be wise to integrate the behavioural dimension also into the risk profiling process. If the investors understand the influence of bias and prevent themselves from succumbing to psychologically induced errors, then in the words of Shefrin, we would wind up exactly where the efficient market school predicts- with markets being efficient.

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