

# Basic Study of Efficient Market Hypothesis and its Deviations Especially by the Impact of Behavioural Finance

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**Abstract**— Market Efficiency is a useful precursor to assess the performance of markets. Efficient Market Hypothesis was put forward by Professor Eugene Fama who argued that asset prices must necessarily reflect all available information. All three variants of EMH are studied and impact of behavioral finance is discussed. The paper is supplemented by some examples of contradiction.

**Key words:** Impact of behavioral Finance, Market Efficiency

## I. INTRODUCTION

Efficient Market Hypothesis is the cornerstone of modern financial theory, and states that the market is extremely efficient in reflecting information, and subsequently it is virtually impossible to beat the market per se. According to the EMH, stocks always trade at their fair value on stock exchanges, making it impossible for investors to either purchase undervalued stocks or sell stocks for inflated prices. In other words, outperforming markets is impossible and purchasing riskier investments is the only way to possibly obtain higher returns.

The informational efficiency of stock prices matters in two main ways. First, investors care about whether various trading strategies can earn excess returns (i.e., “beat the market”). Second, if stock prices accurately reflect all

Information, new investment capital goes to its highest-valued use [1]. Proponents of this theory do not try to pick stocks that are going to be winners; instead, they simply try to match the market's performance.

### A. Weak Form EMH

The weak form EMH stipulates that current asset prices reflect past price and volume information. The information contained in the past sequence of prices of a security is fully reflected in the current market price of that security. The weak form of the EMH implies that investors should not be able to outperform the market using something that “everybody else knows”. Yet, many financial researchers study past stock price series and trading volume (using a technique called technical analysis) data in an attempt to generate profits.

### B. Semi-Strong form EMH

The semi-strong form of the EMH states that all publicly available information is similarly already incorporated into asset prices. In other words, all publicly available information is fully reflected in a security's current market price. Public information written here is not only inclusive of past prices but also data reportable in a company's financial statements, its announcements and others. It also implies that it is virtually impossible to outperform the market using something that is known by everybody. The

semi-strong form of the EMH thus indicates that a company's financial statements are of no help in foretelling future price movements and clinching high investment returns in the long-term point of view.

### C. Strong form EMH

The strong form of the EMH stipulates that private information or insider information too is quickly incorporated in market prices and therefore cannot be used to reap abnormal trading profits. Thus, all information, whether public or private, is fully reflected in a security's current market price. This means no long-term gains are possible, even for the management of a company, with access to insider information. They are not able to take the advantage to profit from information such as a takeover decision which may have been made a few minutes ago. The rationale to support this is that the market anticipates in an unbiased manner, future developments and therefore information has been incorporated and evaluated into market price in a much more objective and informative way than company insiders can take advantage of. [2]

## II. MEASUREMENT

Weak form of the EMH can be measured using statistical tests since the weak form of EMH assumes independent rate of return on the market. These tests include the famous autocorrelation tests in which there is no significant correlation of returns. Another test is the run test using the fact that stock price changes are independent over time. Another class of weak form of EMH tests are the trading tests. Semi Strong tests can be measured using event tests, which compare and analyse the security before and after the said event, and the Regress series tests, in which historical data is used to forecast results. Strong form tests include insiders, exchange specialists, institutional money managers and analysts.

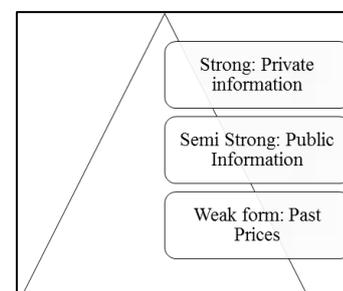


Fig. 1: The hierarchy of different forms of EMH

## III. DEVIATIONS

After EMH was put forward, in the initial years tests of various forms of efficiency had suggested that the markets are reasonably efficient and as the theory suggests beating the markets was not possible. This resulted in a gradual

acceptance of the efficiency of markets. Usually, a revolution provokes a counterrevolution and EMH is no exception to this. Long-term deviations from the EMH in various asset markets lead to arguments that markets may not always be efficient. Behavioural economists attribute the imperfections in financial markets to a combination of cognitive biases such as overconfidence, overreaction, representative bias, information bias and various other predictable human errors in reasoning and information processing. Other empirical studies have shown that picking low P/E stocks can increase chances of beating the markets [3]. The market often appears to be driven by buyers operating on irrational impetuosity, who don't pay heed to the underlying value. As expected, this pattern is typically followed by an overreaction of frantic selling, paving way for shrewd investors to buy stocks at bargain prices and profiting later. The market gets beaten in this process, contradicting EMH. Sudden market crashes are mysterious from the perspective of efficient markets and throw market efficiency to the winds. Other examples are of investors, who have consistently beaten the market over long periods of time, which by definition should not be probable according to the EMH. Another example where EMH is purported to fail are anomalies like cheap stocks outperforming the markets in the long term.

#### IV. IMPACT OF BEHAVIORAL FINANCE

Behavioural finance is the study of the influence of psychology on the behaviour of financial practitioners and the subsequent effect on markets. Behavioural finance is of interest because it helps explain the causes and reasons and the ways markets tend to be inefficient. Behavioural Finance is a field of finance that puts forward psychology-based theories to delineate stock market anomalies. Within behavioural finance, it is assumed that information structure and the characteristics of market participants continuously and systematically influence individuals' investment decisions and of course their market outcomes. In a market consisting of human beings, it seems logical that explanations rooted in human and social psychology would hold great promise in advancing our understanding of stock market behaviour. More recent research has in-so-far attempted to elucidate persistence of anomalies by adopting a psychological perspective. Evidence in the psychology literature reveals that individuals have limited information processing capabilities, exhibit systematic bias in processing information, are prone to making mistakes, and often tend to rely on the opinion of others. The literature on cognitive psychology provides a promising framework for analysing investors' behaviour in the stock market. By dropping the stringent assumption of rationality in conventional models, it might be possible to explain some of the persistent anomalous findings. For example, the observation of overreaction of the markets to news is consistent with the finding that people, in general, tend to overreact to new information. Also, people often allow their decision to be guided by irrelevant points of reference, a phenomenon called "anchoring and adjustment". Experts propose an alternate model of stock prices that recognizes the influence of social psychology. They attribute the movements in stock prices to social movements. Since there is no objective evidence on which to base their predictions of stock prices,

it is suggested that the final opinion of individual investors may largely reflect the opinion of a larger group. Thus, excessive volatility in the stock market is often caused by social "fads" which may have very little rational or logical explanation. To grab more attention and dollars from consumers, companies as far afield as banks and fitness-app makers carefully design their offerings with consumers' decision-making quirks in mind.[4]

#### V. EXAMPLES OF DEVIATIONS

Critics of efficiency argue that there are several instances of recent market history where there is overwhelming evidence that market prices could not have been set by rational investors and that psychological considerations must have played the dominant role. It is alleged, for example, that the stock market lost about one-third of its value from early to mid-October 1987 with essentially no change in the general economic environment. How could market prices be efficient both at the start of October and during the middle of the month? Similarly, it is widely believed that the pricing of Internet stocks in early 2000 could only be explained by the behavior of irrational investors. Such events make a belief in efficient markets untenable.

Internet Bubble of the Late 1990s: Another stock market event often cited by behavioralists as clear evidence of the irrationality of markets is the Internet "bubble" of the late 1990s. Surely, the remarkable market values assigned to internet and related high-tech companies seem inconsistent with rational valuation.

In the Indian context, the weak form efficiency of 11 securities was examined. They were listed on the Bombay Stock exchange (BSE) using weekly data from July 2007 to October 2007. The results concluded that the securities were weak form efficient. [5]

#### VI. CONCLUSION

EMF was studied and the anomalies were discussed. Despite the contradictions, EMF still holds relevance and holds true for a significant number of cases. EMF is a classic example of a revolution being followed by a counterrevolution in the financial system.

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